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Goulstonian Lectures

ON

MODERN VIEWS UPON THE SIGNIFICANCE OF SKIN ERUPTIONS.

Delivered before the Royal College of Physicians of London

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LECTURE II.[1]

Delivered on March 14th.

TOXIC ERUPTIONS.

MR. PRESIDENT AND FELLOWS,—In my last lecture I discussed the significance of those eruptions which result from microbic invasion, and recalled the fact that such eruptions represent a local effort at defence against the microbes and their toxins. I showed how the various forms taken by the eruptions are to be explained by difference in the types of cell-reaction which produce them. I also referred to what we know of the occurrence of more general efforts at defence or immunity production in connexion with these local reactions.

I propose now to consider another large group of eruptions which includes many of the well-defined and more common diseases of the skin, such as erythemas of various types, purpuras, urticarias, eczema, psoriasis, lichen planus, alopecia areata, pemphigus, scleroderma, leucoderma, pityriasis rubra, the tuberculides, and a number of others. As the result of many years of clinical observation these eruptions have been separated as having distinct and characteristic features which entitle them to be regarded as entities, each presumably having some specific origin. Their pathological anatomy has also been studied, and in most of them that too, like the clinical symptoms, is distinct and characteristic. Yet as to the exact nature of perhaps the majority of these affections we still remain ignorant. It is to the question of the possible toxic origin of some of these eruptions, and to the modern ideas as to the significance of toxic eruptions that I intend to devote this lecture.

THE ORIGIN AND DEVELOPMENT OF THE IDEA OF TOXINS IN DERMATOLOGY.

The conception of eruptions as the result of toxins seems to have taken definite shape at the period of the introduction of old tuberculin injections as a means of treatment in 1890, when several cases were reported in which generalised erythemas occurred after injection of tuberculin. Hallopeau and Wickham had, however, at the Congress of Tuberculosis in 1888, already suggested that tuberculin could give rise to "toxinic and non-bacillary cutaneous eruptions." In 1891 Schwenninger and Brizzi claimed to have produced lichen scrofulosorum by local injection of tuberculin.

Then, with the advent of the antidiphtheritic serum for the treatment and prevention of diphtheria in 1894, it was observed that urticarial and erythematous rashes sometimes followed the injection of the serum. It was at first supposed that these eruptions were due to the antitoxin in the serum, but later it was shown that the serum, and not the diphtheria antitoxin, was responsible for them. Then it was discovered that snake-poison had like effects.

From this time we find the expression "toxic erythemas" coming into use, and drug rashes, shell-fish rashes, &c., being compared with the toxic erythemas resulting from serum injections. Rapidly this view gained ground, and then was evolved the idea of auto-intoxication, or that poisons manufactured by the body as the result of defective metabolism or absorbed from the intestinal canal might act like toxins in producing skin eruptions. Tommasoli, one of the pioneers in this field, wrote a monograph suggesting the autotoxic origin of many forms of hyperkeratosis, and Carrocchi applied the same idea to alopecia areata.

In 1896 Hallopeau and Darier propounded the theory that many eruptions hitherto described as scrofulous, and known to be associated in some way with tuberculosis, were due not to the local presence of the tubercle bacillus, but to the toxins produced at a distant focus; and they invented for them the name of toxi-tuberculides. In 1897 Hallopeau contributed to the *Annales de Dermatologie* a paper entitled "Toxins in Dermatology," in which he insisted upon the importance of the rôle played by toxins in the production of dermatoses. The eruptions under consideration were mainly of an erythematous or urticarial type, but Hallopeau suggested that toxins might possibly also play a part in the production of acute eczemas, psoriasis, dermatitis herpetiformis, pemphigus, and other well-known skin affections. As I have already said, for many years some of these eruptions were regarded as angio-neuroses, and it was now felt that the idea of toxæmic origin supported this view, for it seemed easy to explain the eruptions as due to the action of the toxins on the central vaso-motor apparatus. But discussions arose as to whether these so-called toxic erythemas and urticarias were really the result of vaso-motor disturbance, and evidence was brought forward to show that they were inflammatory in nature and due to the direct action of the poison on the smaller blood-vessels and on the tissues around them. Recent observations tend to confirm these views and to suggest that there is a close analogy between the eruptions due to toxins and the inflammatory reactions to microbic invasion.

I shall now consider some of these matters more in detail, first in reference to the toxic erythemas and urticarias, and afterwards as regards other supposed toxic eruptions.

WHAT ARE THE TOXIC BODIES WHICH MAY GIVE RISE TO ERYTHEMATOUS AND URTICARIAL ERUPTIONS?

When we speak of toxic bodies or toxins as the causative agents of eruptions, we generally use the term in a vague and a very broad sense to include all sorts of poisons, and not strictly toxins of bacterial origin. Amongst these poisons with which erythematous and urticarial eruptions may be associated are various drugs, including arsenic, antipyrin, arnica, belladonna, bromides, chloral, quinine, copaiba, ergot, mercury, iodides, iodoform, and opium; certain plants, as the nettle and primula obconica; some articles of food, as strawberries, shell-fish, pork, cheese, and eggs in certain persons, and various forms of tainted meat; the venom or poison of certain insects, crustacea, molluscs, jelly-fish, anemones, &c., and snake poison; the fluid of a ruptured hydatid cyst and the antidiphtheritic serum or simple horse serum, and tuberculin and mallein. Many of these agents produce rashes when applied externally, others when taken by the mouth or administered subcutaneously.

It was suggested by Payne, in an article on "Fixed Erythemas" in the *British Journal of Dermatology* in 1894, that most of these poisons were of one class—namely, alkaloids, either vegetable or synthetical, or produced by the action of bacteria upon food.

Since then we have learnt that besides the alkaloidal ptomaines, which are often comparatively harmless bodies, bacteria also give rise to poisonous bodies which have characters quite distinct from ptomaines. These bodies, by the work of Roux and Yersin, Hankin, Wooldridge, Brieger, Martin, and others, were first separated as albuminoids, then as toxalbumins, and finally as toxins. These toxins are poisonous in infinitesimal doses to a degree very far beyond other poisons. Their chemical composition is quite unknown, for they exist in imponderable quantities. They have certain characters which do not belong to other poisons. They are sensitive to heat, and, what is more remarkable, they produce symptoms of poisoning only after a more or less prolonged incubation period, and, above all, they have the property of exciting in the organism attacked the formation of specific antitoxins and antibodies.

A very interesting fact is that similar bodies to these bacterial toxins have been described as the result of cell activity in animals and plants. The former, called zootoxins, occur in snake poison, spider and toad poisons, and in eel blood. The latter, the plant toxins or phytotoxins, are ricin, croton, and a few others. And, too, there has been described a toxin secreted by muscles as a result of excessive muscular action—fatigue toxin.

Further experience has shown that this toxic action of living cells is only a matter of degree, and that any cell or fluid of animal origin may be toxic for an animal of another species to that from which it is

[1] Lecture I. was published in THE LANCET of April 6th 1912, p. 911.

derived if introduced into that animal's blood. Used, then, in this sense, the term "toxin" has a wider meaning than that of bacterial toxins, and would comprise many of the poisons I have mentioned as giving rise to these eruptions. In discussing drug eruptions, we shall see that it is possibly not the drugs which give rise to the eruptions, but proteid poisons produced by the action of the drugs upon the living cells of the patient. So that there is some reason to suppose that the real poison in all these eruptions is a toxin or poison of living-cell origin.

HOW ARE THESE TOXIC ERYTHEMAS PRODUCED?

I have already mentioned that for many years it was sought to explain these eruptions by the theory that they were angioneuroses, due either to central or peripheral vasomotor disturbance, and that after a time objections were made to this view, because it was found that the eruptions were inflammatory, and therefore not, it was thought, to be produced by simple vasomotor disturbance.

Payne, in 1894, in an article to which I have just referred, suggested that these substances circulating in the blood might act directly upon the tissues, and that this view seemed necessary to explain the more fixed types of erythema with which he was then dealing. Philippson and Jadassohn, in 1897, studied the anatomy of erythema multiforme, and maintained that the lesions were inflammatory. Philippson, in 1899, opposed the then current view of the vasomotor origin of urticaria on the ground that urticaria could be demonstrated experimentally to be inflammatory. He produced in animals urticarial lesions by injection into the skin of minute quantities of morphia, of atropine and of peptone, and of other substances, and these urticarial lesions were produced even when the sympathetic nerves were divided and the sympathetic ganglia removed.

Török and Vas, in 1900, showed that the exudation in an urticarial wheal contained a very high percentage of albumin, suggesting an inflammatory exudation rather than a mere transudation of serum. In 1903 Török and Hari continued the researches of Philippson, and showed that different degrees of inflammation could be produced by various irritants. They injected into the skin warm water, weak potash solution, weak hydrochloric acid, and these produced no urticaria; but solutions of morphia, of atropine, of pepsin, and of trypsin gave rise to definite urticarial wheals, as also did cadaverine, urea, phenic acid, antipyrin, and the broth in which a staphylococcic culture had been grown. From these experiments they concluded that urticaria was an irritative phenomenon from a local cause and not an angioneurosis.

Meanwhile, in France Leredde, in 1898 and in 1899, also wrote combating the view that these eruptions were angioneuroses, and maintaining that all erythematous lesions might be explained by the *direct* action of soluble poisons on the vascular elements (the cells of the vessel walls and the leucocytes) and on the connective tissue elements, without any part being played by the vasomotor system. More recently Gilchrist, of Baltimore, has also demonstrated that urticarial wheals may be produced experimentally and that they give evidence of inflammation, the histological picture showing the presence of enormous numbers of polynuclear leucocytes, increase in the number of lymphocytes, and in some sections a large number of mast cells. (Fig. 14.)

There is, then, a good deal of evidence in support of the view that these erythematous and urticarial eruptions which result from the action of poisons are actual inflammations and not merely vasomotor disturbances. So that, for example, we may regard the wheal produced by the sting of a nettle or by the bite of an insect as representing an inflammatory reaction to a local irritant rather than a reflex vaso-motor disturbance. And it does not seem unreasonable to suppose that these local inflammations, produced by poisons, represent a defensive reaction analogous to that resulting from invasion by microbes and their toxins. There are other facts which support this view, and which point to a close resemblance between these toxic eruptions and microbic eruptions. In some erythematous eruptions, as in roseola of syphilis, the rose rash of typhoid fever, and in some eruptions of erythema multiforme type occurring in cases of pyæmia, micro-organisms—spirochæta, typhoid bacilli, and streptococcus—have been found, showing that micro-organisms and their toxins may give rise to erythematous eruptions identical with those we call toxic erythemas.

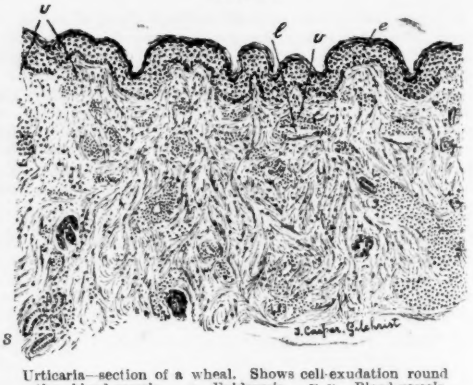
GENERAL IMMUNITY REACTIONS.

But perhaps the most striking resemblance of the action of these poisons to that of bacterial infections is in the property of giving rise to general immunity reactions. This is shown by the fact that, as with bacterial infections, there may be a more or less lengthy incubation period, and that pyrexia, joint pains, gland enlargements, and sometimes albuminuria may accompany toxic skin eruptions. This we know to occur with serum rashes, the incubation period being usually seven to ten days. Rather a striking example is that of a case of vaccination erythema which is pictured by Dr. T. Colcott Fox in the last edition of Clifford Allbutt and Rolleston's "System of Medicine," in which an erythema multiforme type of eruption appeared eight days after vaccination with cow-pox. It is true that there is not always a long incubation period with toxic eruptions, but the reason for this I shall presently endeavour to explain.

It is particularly in the light of some recent ideas in regard to immunity production against various proteid poisons that these toxic eruptions seem comparable to eruptions of microbic origin. The ideas I refer to are those connected with the phenomenon of anaphylaxis. The history of the discovery of this phenomenon is now so well known that I shall here only briefly recall the main facts.

Richet and Hericourt, in 1898, in the course of some investigations on immunity, found that dogs injected with the zootoxic eel serum became very much more sensitive to subsequent injections. Instead of becoming protected from the

FIG. 14.



Urticaria—section of a wheal. Shows cell-exudation round the blood-vessels. E, Epidermis. V, V, Blood-vessels. L, Lymphatic vessels. S, Sweat duct. (Reproduced by kind permission of Dr. J. C. Gilchrist.)

effects of the poison (prophylaxis) the result appeared to be just the opposite (anaphylaxis). These experiments were repeated with similar results with a poison isolated from mussels, and in 1903 Althaus showed that like effects could be produced by substances not usually regarded as poisons. He found that horse serum injected into rabbits rendered them so susceptible to a subsequent injection at the end of a week that they generally died. Now it had been observed already that the serum rashes and other symptoms—fever, joint pains, swelling of the glands, and slight albuminuria—which sometimes occurred after injection of patients with antidiphtheritic serum, appeared much more rapidly, and were often more severe after the second dose than they had been after the first injection. This so-called "immediate reaction" was now explained by the supposition that the patients had been rendered hypersensitive, or anaphylactic, to horse serum by the initial dose.

Various explanations have been offered for these phenomena which it is beyond my power to discuss, but upon broad lines it may be said that this condition of hypersensitiveness is an effort towards protection or immunity. Just as a patient who has been infected with tubercle bacillus becomes so hypersensitive that a general reaction is produced when he is injected with tuberculin, so a patient injected with serum is rendered hypersensitive to a second injection and a more violent and a less delayed reaction takes place. To complete this comparison, we ought to find that a patient made anaphylactic to serum

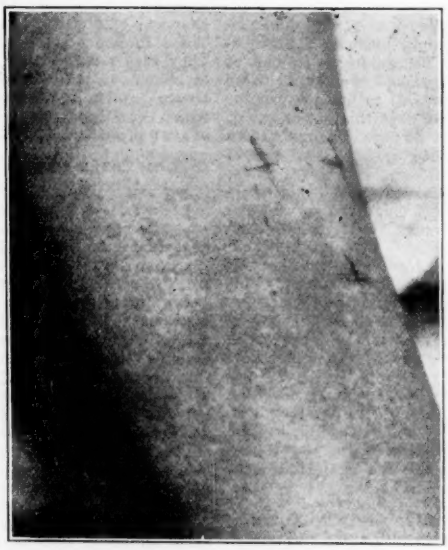
would give not only a general reaction to a subsequent dose but also a local cuti-reaction to a small dose, comparable with the cuti-reaction to tuberculin and to trichophytin in tuberculous and in ringworm cases. And this has, indeed, been shown to be the case.

Moss, in the *Journal of the American Medical Association*, describes how he performed this test on 30 persons. Nine who had not previously had serum injections gave negative results. The remainder gave positive results. Moss applied the test by injecting 0·01 c.c. of normal undiluted horse serum intradermically. A positive result consisted of an area of inflammation 1 to 2 cm. in diameter, which came on within 24 hours and disappeared in two to three days. In three cases a local urticaria was produced. Caillé has also described this test, and some animal experiments have been carried out by various observers lately on a very extensive scale by Coppolino in Italy. Coppolino sensitised animals with pig serum and obtained in them distinct cuti-reactions with serum from the same source. He also got bovine cuti-reactions with peptone in animals previously injected with peptone, and demonstrated by histological examination that the wheals produced showed evidence of inflammatory reaction in varying degree.

In a patient now under my own observation I have been able to demonstrate this cuti-reaction in a very striking manner. The patient is a girl who has been treated for a recurrent cellulitis of the face by injections, first of antidiphtheritic serum, on the supposition that the affection was diphtheria of the skin, and, since, of simple horse serum. On two occasions—now more than 12 months ago—she had severe anaphylactic symptoms after injections—collapse, sickness, and profuse erythematous eruptions. Recently, in order to test her susceptibility to horse serum, I performed a cuti-reaction test by scratching the skin and rubbing in some horse serum, but with no result. Then I injected ½ min. of horse serum into the skin of the arm. Within a few seconds an erythematous blush appeared, and after a few minutes the puncture was surrounded by a hard raised sixpenny-piece-sized urticarial wheal, with a halo of erythema 3 inches in diameter, which lasted for about an hour and a half. (Fig. 15.) A control injection of ½ min. of horse serum into the skin of my own arm also gave at the time no reaction. But seven days later the site of the injection began to itch and there appeared a raised urticarial wheal of the size of a two-shilling piece. The itching and the wheal were present on and off for four to five days.

Thus, in my own case there was a normal reaction, with incubation period of seven days, and the reaction was slight and lasted long. In the patient's case the reaction was immediate, violent, and of short duration owing to the fact that she had become highly hypersensitive to this particular foreign proteid. So rapid and extensive was the reaction given by the patient that it appeared much more likely to be the result of a vaso-motor disturbance than an inflammatory reaction.

FIG. 15.



Cuti-reaction from intra-dermic injection of a minute drop of horse serum in a patient hypersensitive to horse serum. There is a large area of erythema, with a central wheal around the puncture.

In order to determine this point I excised a portion of the wheal 15 minutes after the cuti-injection had been made. The section (Fig. 16) showed decided evidence of being an inflammatory reaction. Around the blood-vessels of the corium there were already dense mononuclear round-cell (fibro-blast) exudations; in the papillary layer there was a proliferation of connective tissue or endothelial cells, and on the surface of the epidermis around the mouth of a hair follicle was a collection of mononuclear round cells which must have forced their way through the epidermis.

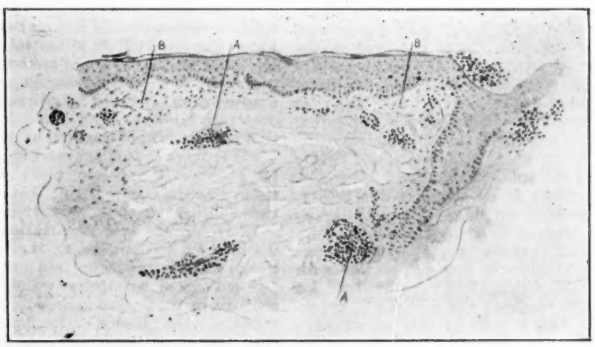
THE DOCTRINE OF HYPERSENSITIVENESS OR ANAPHYLAXIS APPLIED TO SKIN DISEASES.

The case I have just related is interesting as illustrating what I have said as regards the comparison of these toxic eruptions with bacterial eruptions. It is also a good example of the production of a high state of sensitiveness to a foreign proteid or, to employ the term used by German writers, to a heterogeneous albumin, and it serves to explain the clinical features of some cases of urticaria.

It is well known that certain persons are so susceptible to particular foods that immediately they take them they get an attack of nettle-rash. The explanation now suggested for these cases is that the patients have become highly susceptible, or anaphylactic, to certain foreign proteids—egg albumin, pork or veal, for example—which, owing to gastro-intestinal disturbance, have been absorbed, at some previous time, as toxic albumins unconverted by proper digestion. Everyone is familiar with cases in which an attack of urticaria has been brought on by some food poison, and in which there is afterwards for many months a tendency to repeated attacks of urticaria and pruritus. Such urticaria has been defined as a manifestation of hypersensitiveness to heterogeneous albumins, and the rapid improvement of many cases, when put on to vegetable diet, is to be explained by this point of view.

It is perhaps, also, by the phenomenon of anaphylaxis that is to be explained the circumstance to which I referred in my first lecture—namely, the variation in time elapsing between different forms of physical injury to the skin and

FIG. 16.



Cuti-reaction to serum. Section of the wheal shown in Fig 2. A, A, Cell exudation round blood-vessels. B, B, Proliferation of fixed tissue cells.

the resulting reaction. It seems probable that the inflammatory reaction to physical and chemical irritants to the skin is a reaction to toxic bodies produced by destruction of, or damage to, the cells of the tissues. If this be so, we can understand why the body should react immediately to common hurtful agents, such as mechanical injuries; less quickly to less common injuries, like burning; still less quickly to a less common injury, extreme cold; and only after a long incubation period of 10 to 14 days to a previously unknown injury by X rays. It may be that the body has become anaphylactic or hypersensitive to the poisons produced by the more common forms of injury.

Professor J. T. Cash, of Dublin, has recently demonstrated in a very striking manner how extreme hypersensitiveness to a local irritant may be acquired. In one of Cash's experiments he applied an ointment of chloroxylonine (the principle of East India satin-wood) to his own arm for 24 hours without result. After ten days this was repeated. There was no immediate effect, but 22 days afterwards there appeared a dermatitis with itching which lasted several days. Thirty-five days later a third application was made, the ointment being rubbed in only. Forty minutes afterwards the arm began to swell and get red, and an erysipelas-like condition remained for five weeks. After a prolonged rest the dermatitis was not only revived by a much weaker ointment, but it spread to the face, and the mucous membrane of the nose and throat became involved. This experience will recall the extensive dermatitis sometimes seen as a result of the application of a small quantity of some irritant lotion or liniment, and suggests that such patients have acquired an idiosyncrasy to such irritants by previous use.

The term hypersensitiveness, or acquired idiosyncrasy, is, of course, not a new one in dermatology. It has long been known that repeated application of an irritant may in time give rise to a high degree of sensitiveness of the tissues irritated. It is only the idea that this is a manifestation of anaphylaxis that is new.

Drug Eruptions in their Relationship to Toxic Eruptions and to Anaphylaxis.

Before leaving this subject I wish to point out in what way these new ideas may help to explain some of the phenomena which occur in connexion with drug eruptions.

It has for long been recognised that these drug eruptions are not necessarily the result of an excessive dose of the drug, but rather an indication of a peculiar hypersensitiveness, or idiosyncrasy, on the part of the patient. The production of an eruption by a drug seems to bear often no relationship to its physiological action. Some thirty years ago Behrend suggested that the eruptions produced by drugs were independent of the nature and of the physiological effects of those drugs, and that they were due to the action of foreign material, probably of chemical nature, generated in the blood by reason of the presence of the drug in the system. He thought that the smallness of the dose necessary to produce an eruption in many cases negatived the direct action of the drug. To-day we are reviving this idea; for the study of the phenomenon of anaphylaxis is suggesting that drug eruptions are produced by toxic albumins resulting from the action of the drugs upon living cells, and not by the physiological action of the drugs themselves.

The following experiment by Bruck supports this theory. Bruck injected guinea-pigs with the serum of a patient who had shortly before been affected by symptoms of iodoform poisoning. He then found that he was able to produce symptoms of iodoform poisoning in the guinea-pigs with small doses of iodoform. Something had been carried over in the patient's serum which rendered the guinea-pig hypersensitive, and Bruck concluded that it was an albumin compound.

In another way, too, modern ideas in regard to anaphylaxis have been anticipated by dermatologists, for Morrow, writing in 1887, said: "It has been observed that one attack of a drug eruption seems to confirm and intensify the susceptibility to subsequent attacks; while it may have required long and continued doses to determine the eruption in the first place, much smaller doses suffice to promptly redevelop a succeeding outbreak." And again, in regard to iodide of potassium, he writes, that "while it may require several days to develop the eruption the first time, after its disappearance a single small dose may suffice to redevelop it in the course of three or four hours." These are now, of course, well-known facts, but I recall them in order to point out how closely they correspond with the phenomenon of anaphylaxis or production of hypersensitiveness by which we explain the immediate reaction in persons previously treated with serum.

To recapitulate briefly: the toxic erythemas, urticarias, and purpuras may be regarded as inflammatory reactions to the action of poisons, which act particularly upon the vessel walls and upon the tissues around. Possibly these poisons are toxins or products of living cells, either introduced as such or manufactured by the damage of the living cells by chemical or physical agents—i.e., they are foreign proteids. These foreign proteids act as do the toxins of microbes. They give rise not only to the local reactions (seen in the erythematous rashes) but to general reactions of defence. Hence they tend to produce a condition of hypersensitiveness, which is really the result of an effort of the body to rid itself of alien proteids, a stage towards the production of immunity.

The Toxic Origin of Eruptions other than Erythemas, Urticarias, and the like.

I now turn to the consideration of those eruptions which I mentioned at the beginning of this lecture as being possibly of toxic origin. The list is a long one, and includes eczema, psoriasis, lichen planus, pemphigus, dermatitis exfoliativa, alopecia areata, and many others.

Our first thought must be that there is little in common between these eruptions and the toxic erythemas, and that we cannot in the same way suppose them to represent reactions to harmful agents. But on further consideration this idea seems more reasonable. As I have already said, each of these affections has been at some time regarded as of nervous origin; but they are so distinct and so different from one another that it is difficult to realise how they could all be produced by this one cause. That they may be the result of the action of toxins seems more probable, for although each eruption has something in its clinical appearance and in its pathological anatomy which distinguishes it from the others, yet there are certain features common to them all which can be more easily explained by a toxic origin. Their differences might well be due to variations in the kind of toxin, in the same way that distinct types of reaction result from the toxins of different micro-organisms or of different varieties of the same micro-organism.

To take a few examples. We have in lichen planus, alopecia areata, scleroderma, macular atrophy, and xanthoma, five affections which seem to be quite distinct. Yet if we examine the histology of these eruptions we find that they have certain features in common. They each show evidence of destruction or of proliferation of some cellular element; and there is in each some sign of inflammation in the form of a cell proliferation round the blood-vessels. And these conditions—damaged cells and reactive proliferation—are, as we know, the usual effects of hurtful agents. So that from what we know of the action of poisons or toxins upon the tissues generally, it does not seem improbable that many of these eruptions are produced by poisons which have stimulating or destructive effects upon the cells of particular tissues, and that it depends upon the kind of poison and the tissue attacked whether there is or is not marked inflammatory reaction. If, for example, the poison picks out a highly differentiated tissue like the elastic tissue, there may be destruction of this tissue without much inflammation.

It is known that the toxins of tetanus or of diphtheria may do damage to the highly differentiated nerve tissue without producing inflammation. We also know of cell poisons or cytotoxins which may give rise to profound changes in particular cells without producing inflammatory reaction. Dr. Charles Bolton has demonstrated, for example, that the blood serum of the rabbit immunised with the stomach cells of a guinea-pig is cytotoxic for the gastric cells of a guinea-pig, producing in these cells profound changes of which there is not even histological evidence, but which are shown to be present by the fact that they are now readily digested by the gastric juices.

Then, among the drug poisons we may recall some which have an action upon particular cells. Arsenic may give rise to proliferation of the horny cells of the epidermis in the form of hyperkeratosis of the palms and soles. Acetate of thallium may cause baldness by its action on the hair papillæ.

So that there is nothing in the pathological anatomy of any of these eruptions which could not be explained by the action of toxins.

But, it may be asked, supposing these affections to be of toxic origin, what are the toxins or poisons which might be likely to give rise to them? To this we may reply: that such poisons might be derived from some hidden or distant focus of bacterial infection; that they might be absorbed from the alimentary canal as the result of defective digestive processes, or that they might be produced in the body itself, as a result of defective metabolism or of altered gland secretion.

Toxins of Bacterial Origin Absorbed from Some Distant Focus of Infection.

As regards the absorption of bacterial toxins from some focus of infection, the most important example is in the group of so-called *toxi-tuberculides*. I have already referred to the introduction of the idea of toxi-tuberculides by French observers in 1890. The affections now often grouped under this term had been long since described under names which suggested that they had some association with tuberculosis—namely, *lichen scrofulosorum*, *acne scrofulosorum*, and *erythema induratum scrofulosorum or Bazin's disease*. The idea of Hallopeau and other French authors was that these affections were due, not to the actual presence of the tubercle bacillus in the lesions, as was lupus vulgaris, but to the effect of toxins carried from some internal focus of tuberculous infection.

A feature common to all these eruptions is that they form insolent papules or nodules of various sizes, small in lichen scrofulosorum, larger in acne scrofulosorum, and largest in Bazin's disease; and that these papules and nodules tend to break down to form ulcers and punched-out scars, which have no tendency to local spread, as they might be expected to have if they were due to the actual presence of the tubercle bacillus, as, in fact, has lupus vulgaris. Histologically all these eruptions show a cell infiltration primarily, and particularly marked around the blood-vessels (as would be expected from a toxin arriving by the blood stream), but also a proliferation of connective tissue with giant cells like true lupus. That these eruptions are tuberculous no one has any doubt, but it is still a disputed point as to whether they are due to toxins or to the actual presence of tubercle bacilli. Of recent years the tendency is to believe that they are the result of dead or attenuated bacilli, which is really not far removed from an admission that they are due to the toxins rather than to the actual growth and activity of the bacilli.

There are also other eruptions, for example, *lupus erythematosus*, *pityriasis rubra pilaris*, and *pityriasis rubra* of Hebra, which are believed by some observers also to be toxi-tuberculides, and although the evidence is scanty it indicates the tendency of modern ideas.

Another affection, only described in recent years, which is probably of toxic origin, is *gonorrhœal hyperkeratosis* of the palms and soles, which is associated with chronic gonorrhœa and gonorrhœal arthritis, and which is perhaps an example of a proliferation of the horny cells from irritation by a bacterial toxin.

Pemphigus, again, has sometimes been thought to be due to the absorption of toxins from some internal focus of streptococci, but the only case that I know of which gives any support to this view is one published by Dr. J. H. Sequeira of a bullous eruption associated with appendix abscess in a child of three—although there was no examination of the pus, and we do not know that the abscess was streptococcal. Pyorrhœa alveolaris is often mentioned as a possible source of absorption of bacterial toxins, but there is no evidence that any skin eruptions owe their origin to this source.

Auto-Intoxication in Skin Diseases.

It will be seen, then, that there is at present not any very conclusive evidence that there are, apart from toxic erythemas and, possibly, the toxi-tuberculides, eruptions which owe their origin to the toxins of a distant microbic infection. And for the majority of these affections—if we are going to suppose them to be of toxic origin—we are obliged to fall back upon the theory of auto-intoxication. By this we mean that they may be due to poisons absorbed from the alimentary canal as the result of defective digestion, or to products of defective metabolism or of altered gland secretion.

Among the poisonous substances which may result from defective intestinal digestion, there are phenol, cresol, indol, skatol, indican, acetic, butyric and valerianic acids, sulphuric acid, and ammonia. But we have no evidence that absorption of these bodies ever gives rise to any eruption of the skin. Attempts have been made to estimate the amounts of ethereal sulphates and aromatic bodies in the urine as a possible indication of absorption of toxic bodies from the intestine in cases of eruptions of supposed toxic origin, as in *lichen planus*, *psoriasis*, *eczema*, and *dermatitis herpetiformis*, but without any uniform result. So that Van Noorden, in his work on "Metabolism," says that the hope of finding in the ethereal sulphates a reliable proof of the intestinal origin of any dermatosis may therefore be almost abandoned.

Constipation and dilatation of the stomach are stated as causes of auto-intoxication and are regarded by some as the chief factors in the production of *acne* and of *lichen urticatus* or the nettle-rash of infants and children, but the majority of observers will probably agree that there is not always even clinical evidence of this association.

As regards the causation of skin eruptions by means of the products of *defective metabolism*, we know, of course, of *xanthoma* in diabetic subjects, though this eruption is comparatively rare, even in diabetics, and we are ignorant of its exact relationship with the metabolic disturbance. The association of xanthoma with hepatic disorders also points perhaps to some metabolic poison, and the histology of xanthoma shows a cell proliferation most marked around the blood-vessels with degenerative changes occurring in the proliferated cells, conditions which might be explained by the action of a toxin—but our present knowledge carries us no further than this. Gout, so often accused of giving rise to skin eruptions, and to eczema especially, has been long since, to a great extent, discredited by the dermatologists. It is certain that one may see hundreds of cases of *eczema* without ever meeting with a case of gout. In fact, a gouty patient is practically unknown in a skin clinic, although many patients who have skin complaints—even scabies or eczematoid ringworm of the groins and toes—consider these complaints manifestations of gout.

Of eruptions due to poisons which might be supposed to result from excessive or altered secretion of the *internal glands*, our knowledge is also very limited. It is known that in some cases of exophthalmic goitre there may occur alopecia, hyperidrosis, and pigmentations or leucoderma, and it has been thought that scleroderma seemed in some cases to be dependent upon changes in the thyroid gland; while many eruptions are influenced by thyroid gland administration—*ichthyosis*, *pityriasis rubra*, and *psoriasis*, for example. But this is about as far as our actual knowledge extends.

Indeed, although there is much that is attractive in the idea that certain skin eruptions are due to toxins resulting from defective metabolism, yet there is at present little, if any, direct evidence that this occurs. And it must be admitted that the toxic origin of these eruptions is thought to be probable, either because a microbic or nervous origin seems unlikely, or because the clinical features and histology are more easily explained by a toxic origin, or because we know of similar affections due to drug or other definite poisons, or that there are associated symptoms which also suggest a toxæmia.

Observations on Various Diseases.

So far I have taken only a general view of this subject; to sift thoroughly what is known and suggested in regard to the toxic origin of these affections the evidence for each disease ought to be examined separately. This I do not propose to do, but I shall merely give a few instances of special investigations or ideas.

First of all, there are certain eruptions which do appear to bear some relationship to the toxic erythemas which we have been discussing.

Lupus erythematosus is an affection which has been long thought to be of toxic origin, the only point of debate being whether it is due to the toxins of tubercle or to other unknown causes. Its histology suggests a toxic origin. So does the symmetrical arrangement of the eruption in vascular areas. As Liveing pointed out many years ago, and as

Galloway and MacLeod have more recently demonstrated, it presents in some of its features a close resemblance to one of the so-called toxic erythemas—erythema multiforme; and the occurrence of albuminuria in acute extensive cases, as noted by Sequeira, perhaps also points to some acute toxæmic condition.

General exfoliative dermatitis is another skin disease which has of late years come to be regarded as probably of toxic origin, this view being based upon the clinical resemblance to exfoliative dermatitis of certain generalised erythemas with subsequent desquamation, which may follow the administration of certain drugs—of mercury especially, but also of quinine, chloral, opium, and others; and also upon the suggestion, supported by a certain amount of clinical evidence, that the more chronic forms of this disease—those of the type called pityriasis rubra of Hebra—are toxi-tuberculides.

In *scleroderma* we have an example of a skin disease regarding which the views as to causation have changed during recent years. Formerly considered to be a manifestation of rheumatism, scleroderma was afterwards regarded as a trophoneurosis, and now is by many thought to be of toxic origin. The inflammatory nature of the early stages, and the occasional association of urticaria or erythema, or of joint pains and exudation with scleroderma, all help to suggest a toxæmic condition.

Alopecia areata, about the cause of which opinions were formerly divided between a parasitic and a nervous origin, is also now suspected to be due to some toxic agent. For it is realised that the fall of hair is due, not to a disease attacking the hair itself, but to something which does damage to the hair papilla. The suddenness with which the hair sometimes falls, the spontaneous recovery with relapses, and the fact that the whole body is often affected are very suggestive of some poison brought by the vascular system and acting on the hair papillæ. And this idea is supported by comparison with alopecias occurring after illnesses, and from the internal administration of acetate of thallium which, given for night sweating in phthisis, has sometimes led to falling of the hair. Alopecia areata is often a family disease, and it is possible that in certain persons the hair papillæ are particularly sensitive to local influences, so that various toxins, of tubercle and of syphilis, perhaps, occasionally, among others, may lead to the production of alopecia areata.

Leucoderma is another affection which—for long regarded as of neurotic origin—is now, in the opinion of some observers, believed to be probably due to a toxæmia. Ehrmann has recorded cases in which "factitious erythema or dermographism" was well marked, and it is thought that the presence of a small round-celled infiltration around the vessels of the affected parts suggests a toxic agent. Leucoderma and scleroderma are not infrequently associated. The occurrence of leucoderma syphilitica on areas previously occupied by the macular rash points to a toxic origin of this form of leucoderma and, by analogy, of other forms.

Macular atrophy—a somewhat rare condition in which there occur over the trunk rounded or oval areas of atrophied skin—is an example of a skin affection formerly called idiopathic, and now known to be preceded by erythema and thought to be possibly of toxic origin. The atrophy is due to destruction of the elastic fibres of the corium, and it is thought that this must be the result of some poison, the preceding erythema giving support to this view. Sometimes these macules occur in syphilitic and in tuberculous subjects, and I recently exhibited a case of macular atrophy in a tuberculous subject in whom some of the atrophic macules were actually developing upon the same area as that occupied by groups of lichen scrofulosorum, suggesting that the toxins of tubercle may have destroyed the elastic tissue, as has been supposed in similar cases by Heuss, Thibierge, Wechselmann, and others. In other cases the atrophic macules have occupied the former site of syphilitic macules or papules, suggesting that the toxins of syphilis have led to the destruction of the elastic fibres.

Then we have in the *bullous eruptions* a large group which was at one time regarded as being of nervous origin, but some members of which have been proved to be due to microbic infections, and the remainder of which are now thought to be probably of toxic origin.

In respect to *pemphigus vulgaris*, the theory of nervous origin rests solely upon the fact that in a very few cases nerve changes have been found after death, though as a rule there is no evidence of any such changes, nor are there any symptoms pointing to nervous disturbance. Against the views of a bacterial origin of pemphigus vulgaris are the facts that the earliest bullæ are sterile and that the affection is not contagious. In many cases it can be demonstrated that there is in reality a disturbance of the whole epidermis, and it is only by accident that the bullæ appear in certain parts, for by firm pressure with the finger in apparently normal areas there is found to be a loosening of the horny cell layer of the epidermis which easily slides off (Nikolsky's sign). This fact has suggested that there is some toxin in the blood which is cytolytic for the superficial horny cells. This, however, is only theory, and we have no direct evidence of toxæmia beyond the fact that there is usually a marked increase of eosinophiles in the blood—a condition which we generally understand to indicate a toxæmia.

In *herpes gestationis*, an affection perhaps allied to pemphigus, it has been suggested by Wechselmann and others that there is an intoxication by the products of disassimilation of the fœtus and placenta. Others have thought that it might be due to some infection of pregnancy. That the fœtus may die in some cases seems strong evidence of a toxæmia. Dr. Herbert French, in his Goulstonian lectures in 1908,[2] said he thought it possible that no abnormal substance was produced, but that certain persons were unusually susceptible to some compound which is a normal metabolic product of the pregnant state. Meyer and Linser, believing this supposed susceptibility to result from the absence of natural antitoxins from the patient's serum, injected a patient who had herpes gestationis with the serum of a normal pregnant woman, with the result that the fever ceased and the eruptive lesions disappeared. One may question, however, whether this might not have happened after ordinary horse serum injections.

There is just one other eruption of the bullous type to which I feel compelled to refer because of some interesting observations which have been made in connexion with it. I mean the eruption called *hydroa aestivalis*. This is a somewhat rare vesicular and bullous eruption which appears on uncovered parts on exposure to bright sunlight. It has been shown experimentally that these eruptions are due to the action on the skin of the violet rays of the spectrum. It has also been observed that some of the persons who are liable to these "light" eruptions have hæmatoporphyrin in the urine. The interesting experiments to which I refer are those which have demonstrated the connexion between this hæmatoporphyrinuria and the action of the sun's light upon the skin. Hausmann has shown that hæmatoporphyrin will kill infusoria in the light but not in the dark. He has also shown that when white mice are injected with a weak alkaline crystallised hæmatoporphyrin they take no harm so long as they are kept in the dark, but they die when exposed to strong sunlight which alone does not hurt them. With a less intense heat they show skin changes, redness of the ears, nose, extremities and joints, with swelling of the whole body. From these experiments Hausmann was led to believe that hæmatoporphyrin acts in a toxic manner on the cells of the skin—the endothelium of the vessels or perhaps the epidermal cells—thus rendering them more sensitive to light, so that they are readily damaged, and inflammatory reaction results. Other observers have elaborated Hausmann's experiments by rendering rabbits hæmatoporphyrinuric by dosing them with sulphonal (which is known to produce that condition), and by finding that their skins were then easily blistered by exposure to ultra-violet light.

These observations may help perhaps to throw some light upon the etiology of other skin eruptions, suggesting that there may often be two factors in their production—a poison damaging the epidermic cells and rendering them sensitive to the action of some local physical agent. It seems possible that one of the most common of skin diseases, eczema, may owe its origin to two such causes.

A suggestion was made a few years ago by Dr. Leslie Roberts, that *eczema* might be due to the effects of a locally produced toxin. Dr. Roberts thought that eczema might be regarded as an inflammatory reaction,

[2] THE LANCET, May 2nd, 1908, p. 1257.

as an effort to get rid of some local irritant, that local irritant being produced by metabolic changes in the epithelial cells as the result of various mechanical or other physical stimulants. Such a view accords with what we know to happen clinically. A person, apparently in good health, gradually acquires a high degree of hypersensitiveness of the skin, first to some local irritant, and then to all forms of local irritants; and this hypersensitiveness is manifested in the form of the inflammatory reaction which we know as eczema. The correctness of this view is also supported by the results of treatment; for we know that the only really effectual treatment for eczema is to protect the affected parts, not only from the irritant which began the mischief, but from all local irritants until the patient has lost this hypersensitiveness, and that when we have reached this stage the eczema does not return. And yet even if we suppose the toxin which gives rise to the inflammation to be produced locally, as the result of the action of a physical agent on the epithelial cells, it is difficult to resist the idea that there is in eczematous subjects some predisposing cause which renders the epidermal cells sensitive to slight physical injuries. As to what this predisposing cause may be we have at present no idea, but that there may be such a double cause has been shown by the observations made in regard to hydroa aestivalis.

In conclusion, it may be said that, although a toxic origin seems probable for a vast number of skin eruptions, no pretence can be made that this idea yet supplies a complete solution of the question of the causation of these affections. For it must be obvious that, even supposing this view to be a correct one, dermatology has still a long way to advance before it can be possible to discover the specific toxins for these many distinct eruptions. It is possible that they are present only in the minutest quantities, and that they require methods for their detection such as we do not now possess. Some day this unknown territory may be explored by the aid of the physiological chemist, and the study of the causation of these eruptions may possibly lead to discoveries which will clear up some of the problems of the pathology of disease in general; but at present not even the road which leads to this field of research is clearly marked out.

CHELSEA HOSPITAL FOR WOMEN.—At the annual meeting of the Governors, the President, Viscount Castlereagh, being in the chair, the announcement was made that it was now possible to deal with the re-building of the hospital. Earl Cadogan, whose interest in the work of the hospital had been shown in many ways, had most generously presented it with a site of over 1¼ acres in Chelsea. Here it was to be rebuilt, free from the disturbance of noise, and with half as many beds again. At the same time the trustees of the Zunz bequest had promised a grant of £10,000 to make up the balance of the sum that would be required for construction. Mr. Dyer Edwards also had promised to forego a mortgage of £4000 which he held on the present hospital and site so that these might be sold unencumbered.

WORTHING HOSPITAL: NEW OUT-PATIENTS' DEPARTMENT.—Another noteworthy event marks the great work which is being carried on at Worthing Hospital. The new out-patients' department, which has been erected at a cost of nearly £3000, was opened recently by the Duke of Norfolk. The department supplies a need which has been seriously felt for some years owing to the demands upon the hospital, particularly among out-patients. It was originally intended that the new building, or a specific portion of it, should be regarded as a memorial to Mr. A. H. Collet, who for 37 years was a valued member of the honorary medical staff. He died in 1909, and while a considerable sum had been raised for the project of the Collet memorial, as has already been stated in these columns, the sanction of the subscribers was necessary to extend the scheme, so that the erection of the department should be the Worthing memorial to King Edward. Such is the short history of the handsome and commodious new buildings which have been erected on all the latest principles. Barely half of the cost of the building has yet been raised, and a strong appeal is being made in the hope that the balance will soon be liquidated and that there will be no occasion to sell any of the invested funds.

A CONTRIBUTION TO THE STUDY OF SECONDARY INFECTIONS IN PULMONARY TUBERCULOSIS.[1]

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PULMONARY tuberculosis, both in its clinical manifestations and morbid anatomy, presents at various stages of the disease a complexity of signs and symptoms which distinguish it from the majority of the known bacterial infections. It is not strange that it has been mooted whether such varying conditions are due solely to the interaction of tubercle bacilli of heterogeneous virulence and a greater or less degree of resistance on the part of the host, or to the complicity of this bacillus with one or more of the pathogenic bacteria. Indeed, opinion is divided as to the part played by the so-called secondary infections in any but the most advanced stages of the disease.

In 1884 Koch referred to the occurrence of secondary bacteria in the walls of tuberculous cavities of the lung. Some seven years later Koch and Kitasato devised a technique consisting in repeated washings of the sputum of tuberculous patients in sterile water, hoping by this means to remove all bacteria with the exception of those inseparable from the tubercle bacilli in the actual focus of disease. This has been the method usually employed for purposes of examination.

Wassermann and Cornil combined a bacteriological investigation of the sputum with a subsequent study of the micro-organisms recovered post mortem from the contents of the cavities. The results, on the whole, closely corresponded.

Ortner, in an interesting communication published in 1893, inquired into the relation between bacteriological findings and the morbid histology in the acute and chronic stages of pulmonary tuberculosis. He divided his cases into three groups. In Group 1, i.e., tuberculosis and pneumonic foci, in 25 out of 27 cases tubercle bacilli were present, and in 23 micrococcus pneumoniæ. In Group 2, i.e., tuberculosis without signs of inflammation round the tuberculous foci, in 15 cases examined tubercle bacillus was present in all, in 5 micrococcus pneumoniæ was present, and in 10 no secondary organisms were recovered. In Group 3, i.e., acute or sub-acute miliary tuberculosis, in 8 out of 9 cases tubercle bacillus was present, in 8 micrococcus pneumoniæ, and in 1 staphylococcus aureus. "The micro-organism recovered from all but 3 cases (2 typical pneumococci, and 1 apparently genuine streptococcus pyogenes) as a result of its cultural characteristics, its behaviour in the animal body, and in section should be placed in a position intermediate between a typical streptococcus pyogenes and a typical diplococcus pneumoniæ." This conclusion arrived at by Ortner is confirmed by the present work, and whereas formerly the term pneumo-streptococcus had been adopted for this bacterium, it has been decided to follow Ortner's terminology and call it the micrococcus pneumoniæ. Ortner concludes at the end of his work that "the broncho-pneumonic processes which occur in the course of chronic pulmonary tuberculosis are caused by the M. pneumoniæ." Finally he says: "In a tuberculous lung one must recognise two pathological processes—the formation of tubercles and the development of pneumonic processes. Both are to be separated on histological grounds, both are also different etiologically. For the pneumonic processes so common in pulmonary tuberculosis are the result of the activity of the M. pneumoniæ, the tubercles of that of the tubercle bacillus."

The value of the works referred to is now debatable; increased knowledge has shown that the mere recovery of a micro-organism does not necessarily denote it as an infecting agent. More especially is this so when the site of infection harbours under normal conditions even virulent strains of the pathogenic bacteria. The presence of staphylococci, streptococci, and pneumococci in the mouth and nasopharynx of healthy individuals is definitely established. There is a further complication. Virulent pathogenic bacteria may persist for long periods in the recently infected host, but

[1] This research was undertaken under a grant from H.M. Local Government Board, and a summary of the results obtained has been published in the Report of the Medical Officer of the Board for 1911.

while causing him no harm may retain their full virulence and capacity for infecting another susceptible being. Typhoid, diphtheria, and cholera carriers are now well-recognised examples.

Ulcerated surfaces exposed to the outer world are especially prone to secondary contamination with pathogenic bacteria; ulcers of the lungs and of the intestines can hardly avoid pollution. But it is not sufficient to recover one or more bacteria in addition to the tubercle bacillus from an ulcer of the lung or intestine to assign to them the rôle of offending bacteria. Nor is the required information to be gained by establishing their virulence by animal inoculations, as has been shown by Baumgarten.

The study of the immunity processes of the body which began with the researches of Metchnikoff from the cellular, and with those of Durham, Gruber, and Buchner from the humoral, standpoint, opened up a new and far-reaching field of investigation. These pioneer workers and their pupils proved that cellular and humoral reactions occur in the body as a result of the bacterial infection, and subsequent workers have turned these reactions to specific account in the diagnosis of the infecting nature of the various pathogenic bacteria. In some instances these tests are of paramount importance—e.g., the agglutination test in the diagnosis of Mediterranean fever and typhoid fever, the complement-fixation test in the diagnosis of syphilis. It is to be regretted that these tests can only be satisfactorily applied to the diagnosis of a limited number of bacterial infections. The development of specific immune substances in response to infection by the majority of the pathogenic bacteria is often variable—e.g., agglutinins in the case of the bacillus tuberculosis.

The researches of Almroth Wright and S. R. Douglas marked a further advance. We have in the opsonic index a test applicable not only to the majority of the pathogenic bacteria but unique in its ability to measure a deficiency as well as an increased production of protective substances. The value of wide variations of the opsonic index due to auto-inoculations spontaneously occurring or artificially induced is sufficiently established as an aid to the diagnosis of bacterial infections. During an investigation into the significance of fever in pulmonary tuberculosis it was observed that an approximately inverse relation of the opsonic index and the temperature existed. This can be readily demonstrated in cases of localised tuberculous infections receiving injections of tuberculin. The same is true for the relation of temperature to opsonic index in the case of tuberculous infections in which auto-inoculations are artificially induced. The further stage is one of generalised tuberculosis, in which spontaneous and uncontrolled auto-inoculations continuously occur.

Acute tuberculosis of the serous membranes serves as an example of uncomplicated tuberculous infection. In the graver forms of pulmonary tuberculosis the inverse relationship is quite apparent in some cases, but obscured in others. The morbid anatomy of the disease with its picture of exposed ulcerated surfaces is suggestive of more than a pure tuberculous infection.

Clinical opinion is at variance as to the part played by secondary infections in pulmonary tuberculosis, and as to their relationship to fever. To some the mere presence of fever signifies a secondary infection, to others the tubercle bacillus is the all-important factor. In the present investigation the question has been approached from the laboratory standpoint without any preconceived ideas; attention has been paid in the first instance to the temperature and opsonic curves.

Selection of Cases.

It has been customary to classify cases of pulmonary tuberculosis according to the signs determined by physical examination of the chest. A modern classification of pulmonary tuberculosis must be based on our knowledge of immunity with reference to the temperature and specific serum reactions; in this investigation the author has utilised the following classification in the selection and grouping of the cases:—

Group 1.—"Resting febrile." Cases with fever at rest in bed.

Group 2.—"Ambulant febrile, resting afebrile." Usually a transition stage between Groups 1 and 3.

Group 3.—"Ambulant afebrile." Cases without fever taking walking exercise; the amount of exercise not under direct medical control.

Group 4.—"Working afebrile." In this group are included patients at the Frimley Sanatorium, who, under the control of Dr. M. S. Paterson, were satisfactorily performing the hardest possible navvy work. Further, these cases are under treatment in the country, whilst those of Groups 1–3 were in the centre of a large city at the time of examination. There is, unfortunately, no record of the temperature in some of these cases.

Each group is divided into three subdivisions: (*a*) Infection by tubercle bacilli and secondary organisms; (*b*) infection by tubercle bacilli alone; and (*c*) infection by secondary organisms alone.

Technique.

1. The patient is instructed to rinse the mouth with a mild antiseptic lotion, and the sputum is collected in a sterilised glass vessel.

2. A selected yellow muco-purulent portion is transferred to a broth culture tube and incubated for 24 hours at 37° C. Films were stained for tubercle bacilli and by Gram's method. If tubercle bacilli were not present the sample of sputum was discarded. It was found that very little evidence of importance could be obtained from the examination of the Gram film. With the exception of a few cases early in the series the sputum was not washed according to the procedure of Koch and Kitasato.

3. Subcultures were made from the broth on to agar slopes and again incubated for 24 hours. Pure cultures were obtained by subculture.

4. Collection of samples of blood. In cases of Groups 1 and 2 samples of blood were obtained every four hours over a period of 24 hours as also a record of the temperature. In cases of Groups 3 and 4 four capsules were filled—(1) in bed, (2) immediately after exercise, (3) after one hour's rest, and (4) after a further rest of ½–1 hour. The temperature was taken on each of these four occasions. In a few cases the rectal temperature was synchronously recorded.

5. Estimation of the opsonic index. The same procedure was observed in every experiment. 1. Emulsions of the pure cultures obtained were prepared and standardised. The emulsion of the tubercle bacilli was made from a dried stock culture. 2. The placing of the various bloods and the placing of the two controls was left entirely to the assistant. The technique of Wright and Douglas was closely followed. The blood examinations were always made within the next 24 hours.

Commentary.

The plan of investigation and the technique employed have avowedly certain limitations. Examinations extending over the brief period of 24 hours can only afford but a glimpse of the immunity processes occurring in such a disease as pulmonary tuberculosis. The 12-hourly temperature chart, for a period of ten days before and after the date of the blood examination, is given whenever possible, and may serve to remedy this defect to a degree.

With a very few exceptions the examinations have not been repeated on the same case. Again, an interval elapsed between the cultivation of the sputum and the examination of the blood; this alone negatives a continuous investigation. Further, the standardisation of three emulsions and the determining of 24 indices to obtain one chart is no light undertaking.

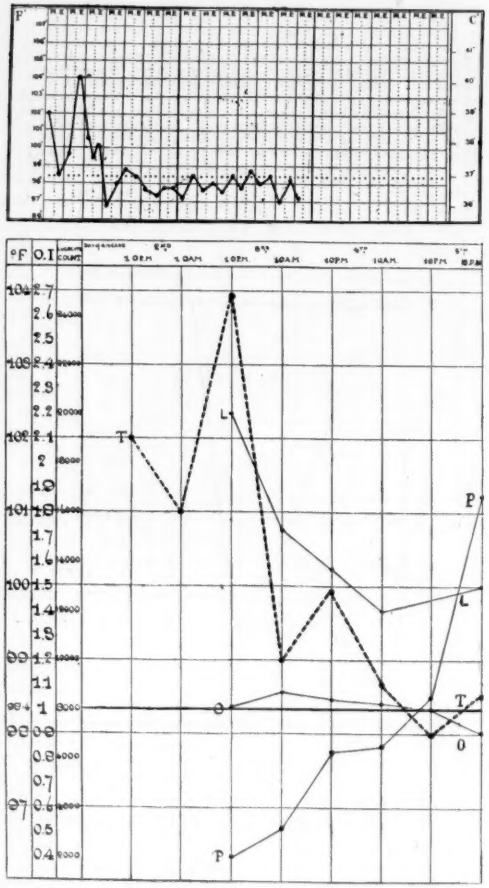
It is fully recognised that the opsonic index is a measure of but one of the protective substances elaborated in response to an infection. In this research an attempt is made to correlate the clinical condition, the fever, the bacteriological findings, and the production of one of the immune substances.

The washing of the sputum was purposely omitted, so that no evidence for or against the symbiosis of the tubercle bacillus with other micro-organisms can be deduced.

In the cases of Group 1 the total leucocytes of the peripheral blood were estimated; the figures obtained, being inconclusive, are not given.

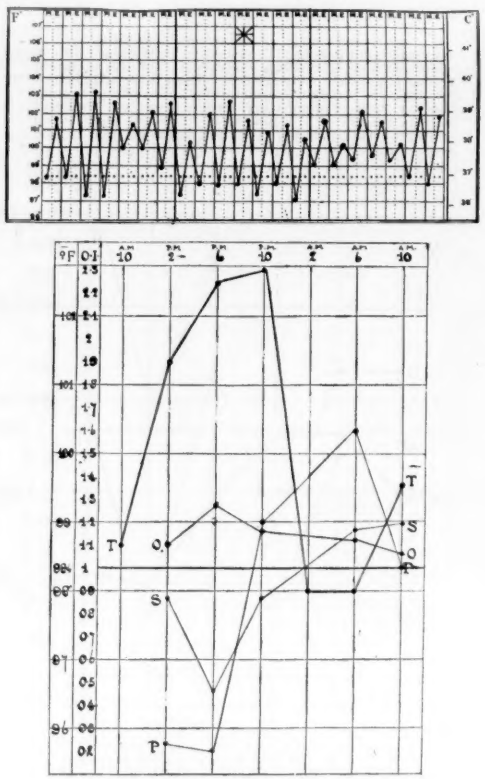
The morphological and cultural characteristics of the micro-organisms recovered from the sputum are not stated, and reference to them is omitted from the protocol. It is not essential in the study of secondary infections in pulmonary tuberculosis to be intimately acquainted with the behaviour of the organisms in question on the test media usually advocated for the purpose. For this reason, and pending further

CHART I. (Group 1*a*).



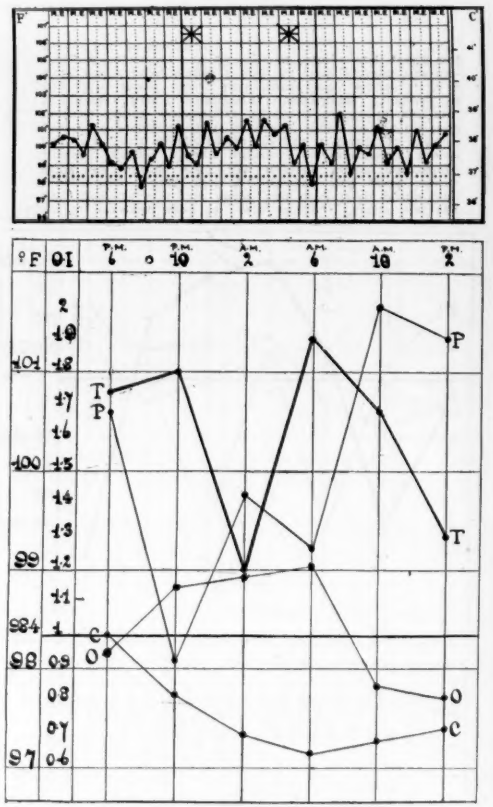
CASE 1.—Female, aged 21 years, single. A case of acute lobar pneumonia on the right side. The onset of the disease was on the day before the blood examination was instituted. The patient made an uneventful recovery.

CHART II. (Group 1*a*).



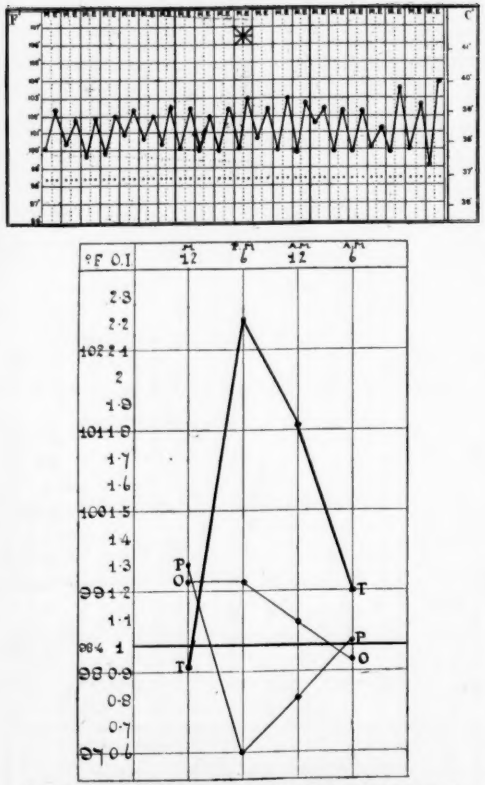
CASE 2.—Male, aged 20 years, single. Family history: Father and one brother had died from consumption. Past history: Well until six months before admission, when he brought up half a pint of blood during a fit of coughing. Present illness: Slight cough; expectoration slight in amount; pain in the right side of the chest; hæmoptysis on two occasions; emaciation, lost 1 st. in weight; night sweats present; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the right upper lobe. During a stay of five months in the hospital the patient gradually went down hill and the disease advanced. Three months after admission a pneumothorax developed on the right side. The patient died in hospital.

CHART III. (Group 1*a*).



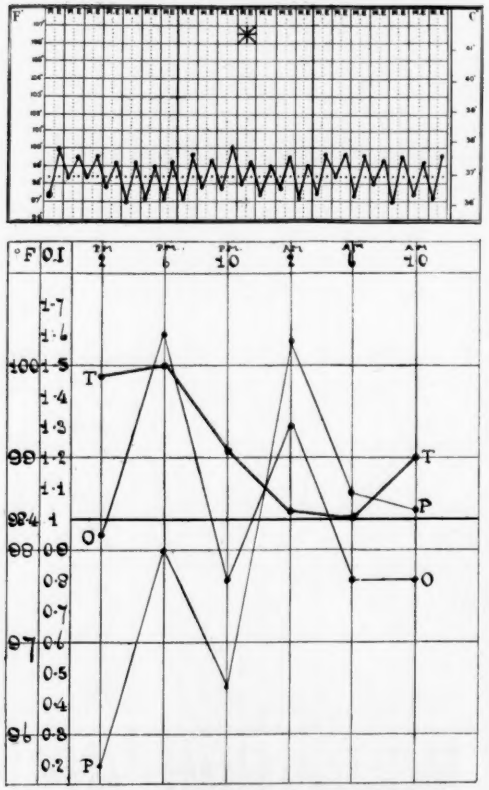
CASE 3.—Female, aged 30 years, single. Family history: Mother had died from consumption, and one sister is said to have the disease now. Past history: Two years before admission had "influenza"; since then has had cough. Present illness: Cough persistent; little expectoration; no pain; no hæmoptysis; emaciation; lost 1 st. in weight; night sweats profuse; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis; apical infiltration of the right upper lobe. Infiltration of both upper and lower lobes on the left side. The patient gradually got worse. She was discharged "not so well" at the end of 288 days in the hospital. She had lost 8½ lb. in weight.

CHART IV. (Group 1*a*).



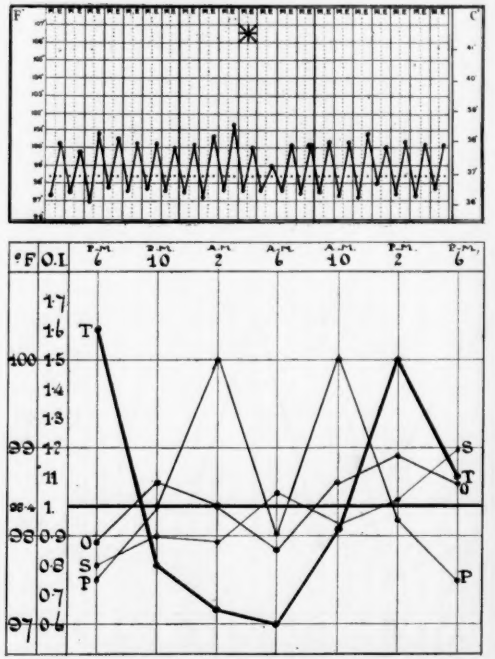
CASE 4.—Male, aged 26 years, single. No family history of tuberculosis. Had had good health up to nine months before admission. Insidious onset with cough and pain in the right side of the chest. Present illness: Cough troublesome; expectoration copious and muco-purulent; pain occasionally in the right side of the chest; hæmoptysis absent; marked emaciation; night sweats previous to admission; tubercle bacilli present in sputum. Diagnosis: Chronic pulmonary tuberculosis. Excavation of the right upper lobe and infiltration of the middle and lower lobes on the same side. Excavation of both upper and lower lobes on the left side. Infiltration of the left vocal cord of the larynx. This patient steadily went down hill and died after a stay of 76 days in the hospital.

CHART V. (Group 1*a*).



CASE 5.—Female, aged 21 years, single. Family history: One brother and one sister had died from pulmonary tuberculosis. Past history: Well until five months before admission to the hospital; then caught cold. Present illness: Cough and expectoration present; no pain or hæmoptysis; emaciation and night sweats present; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Excavation of the right upper lobe and infiltration of the lower lobe on the same side. This patient was under observation and treatment for 202 days, at the end of which time she was discharged "improved," having gained 10 lb. in weight.

CHART VI. (Group 1*a*).



CASE 6.—Female, aged 14 years, single. Family history: Two brothers and one sister had died from pulmonary tuberculosis. Past history: Always had good health until she caught cold five months before admission. Present illness: Cough present; expectoration muco-purulent; pain at the costal margin in front; no hæmoptysis; emaciation fairly marked; night sweats for four months before admission; tubercle bacilli in sputum. Diagnosis: Acute pulmonary tuberculosis. ? deposit in the right lower lobe. Left upper lobe, stages 1, 2, 3. Left lower lobe, stages 1 and 2. The patient was discharged at the end of 96 days as "improved"; she had gained 5 lb. in weight.

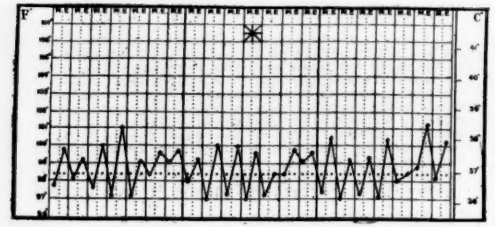
CHART VII. (Group 1*a*).

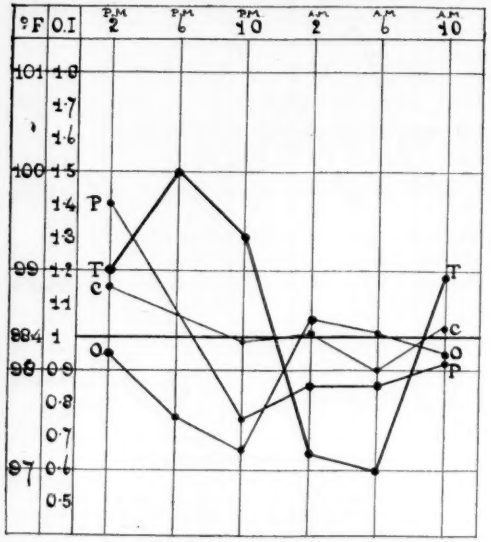
CHART VIII. (Group 1*a*).

Infiltration of the middle and lower lobes on the same side. Excavation of both upper and lower lobes on the left side. Infiltration of the left vocal cord of the larynx. This patient steadily went down hill and died after a stay of 76 days in the hospital.

observation and treatment for 202 days, at the end of which time she was discharged "improved," having gained 10 lb. in weight.

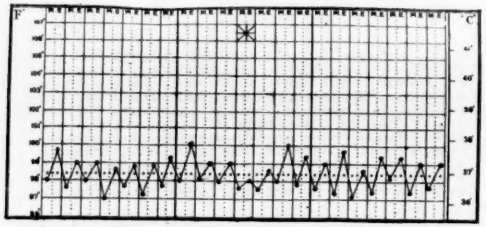
CHART VII. (Group 1*a*).

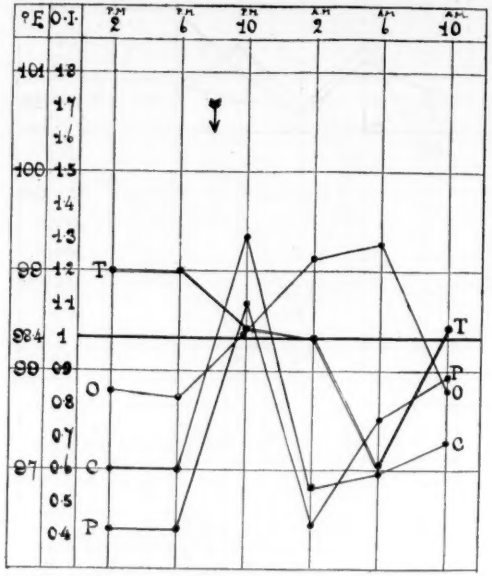




CASE 7.—Female, aged 31 years, single. Family history: One sister had died from ? consumption. Past history: Had pleurisy one year previous to admission. Present illness: Cough and expectoration present; no pain; hæmoptysis on three occasions; emaciation, had lost 2 st. in weight; night sweats previously; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the upper lobes on the right and left sides. This patient was under observation for 247 days. The disease gradually extended, and the symptoms became aggravated. She lost 14½ lb. in weight, and was discharged "not so well."

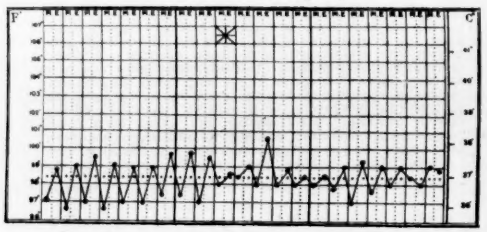
CHART VIII. (Group 1*a*).

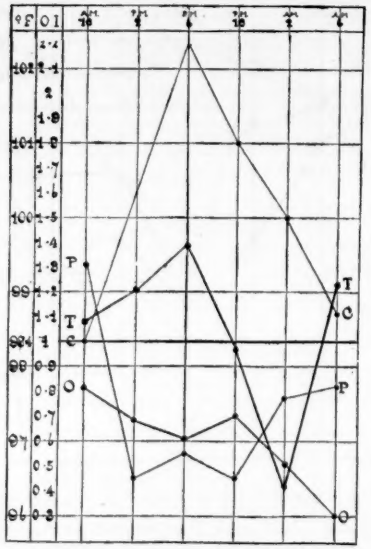




CASE 8.—Male, aged 27 years, single. No family history of tuberculosis. Hæmoptysis 12 months before admission. Present illness: Very little cough; expectoration yellow and nummular; no pain; hæmoptysis, as above, and small amounts 3½ months before admission; emaciation, lost nearly 1 st.; night sweats occasionally; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the right upper lobe. Softening of both upper and lower lobes on the left side. The patient improved during a stay of 69 days in the hospital, and was transferred to the sanatorium for further treatment. He gained 4 lb. in weight.

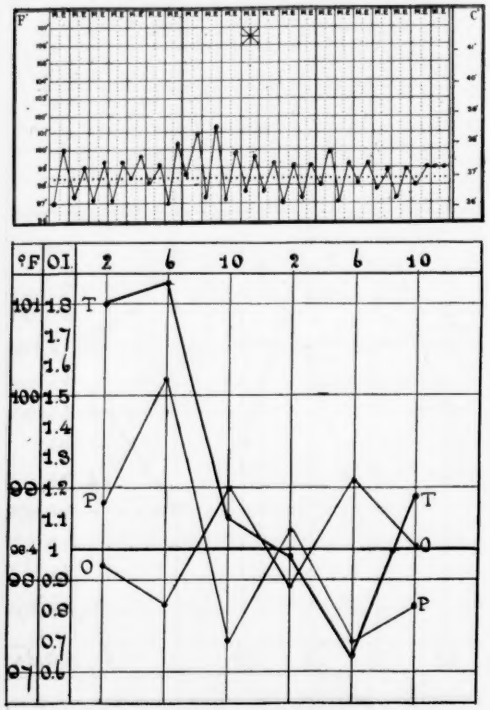
CHART IX. (Group 1*a*).





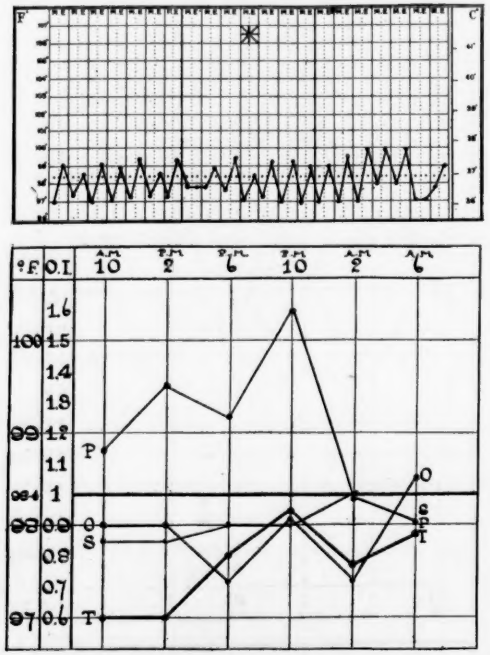
CASE 9.—Female, aged 19 years, single. One sister had died from pulmonary tuberculosis. The patient had been well up to 18 months previous to admission. Present illness: Slight cough, with occasional expectoration; pain in left shoulder and side; no hæmoptysis; no marked emaciation and no night sweats; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration and excavation of the left upper and apex of lower lobes. Infiltration of the right upper lobe. The patient was discharged from the hospital at the end of 150 days *in statu quo*, having gained 2¼ lb.

[CHART X. (Group 1*a*).



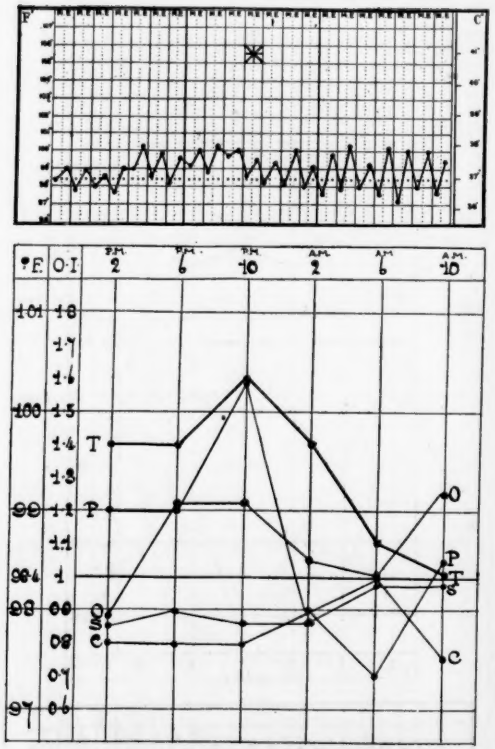
CASE 10.—Female, aged 20 years, single. Family history: Two maternal cousins had died from pulmonary tuberculosis, and another has it now. Past history: Pleurisy two months before admission; otherwise well. Present illness: Cough present; expectoration yellow; pain in the throat (tuberculous laryngitis); hæmoptysis present, for six weeks expectorated some clots; no emaciation, and night sweats only occasionally; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the upper and lower lobes on the right side, and of the upper lobe on the left side. The patient gained 6½ lb. in weight, and was discharged at the end of 94 days *in statu quo*.

CHART XI. (Group 1*a*).



CASE 11.—Female, aged 41 years, married. No family history of tuberculosis. Past history: Fifteen years before admission the patient had tuberculous glands in the neck. Cough persistent for ten years before admission. Present illness: Cough present; slight expectoration; no pain or hæmoptysis, but some emaciation and night sweats; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the right upper and lower lobes. Excavation of the left upper lobe and infiltration and softening of the lower lobe. This patient was discharged "improved" at the end of 87 days. She had gained 3 lb. in weight.

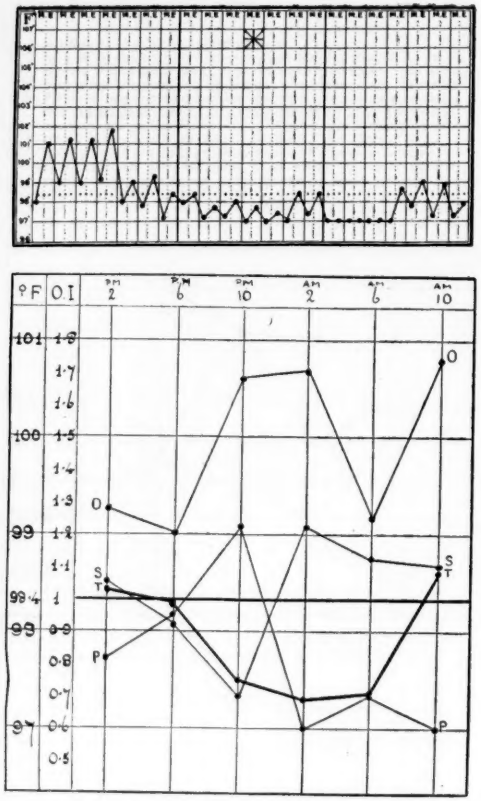
CHART XII (Group 1*a*).



CASE 12.—Female, aged 23 years, single. Family history: One sister had died from consumption, and her father from "asthma." Past history: Pleurisy 2 years before admission; since then cough and expectoration. Present illness: Cough persistent; expectoration muco-purulent; pain in the right side of the chest; hæmoptysis, streaks of blood in the sputum some time before admission; emaciation not noticed; night sweats present; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration and softening of the upper and lower lobes on the right side. Infiltration and softening of both lobes on the left side. This patient was under treatment for 230 days, but did not improve. She was discharged "not so well," having lost 4½ lb. in weight.

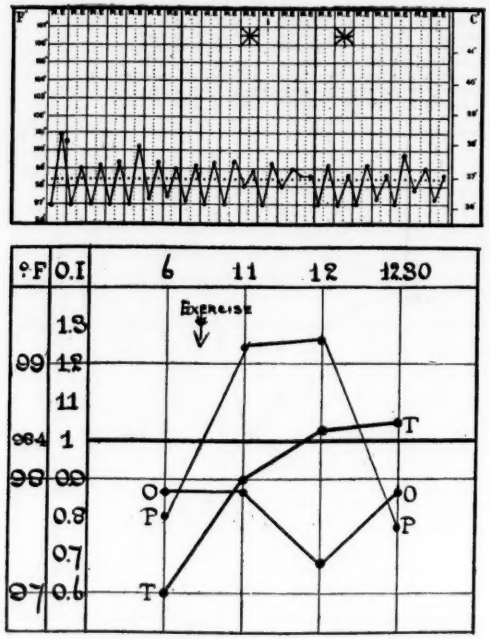
side. This patient was under treatment for 230 days, but did not improve. She was discharged "not so well," having lost 4½ lb. in weight.

CHART XIII. (Group 2*a*).



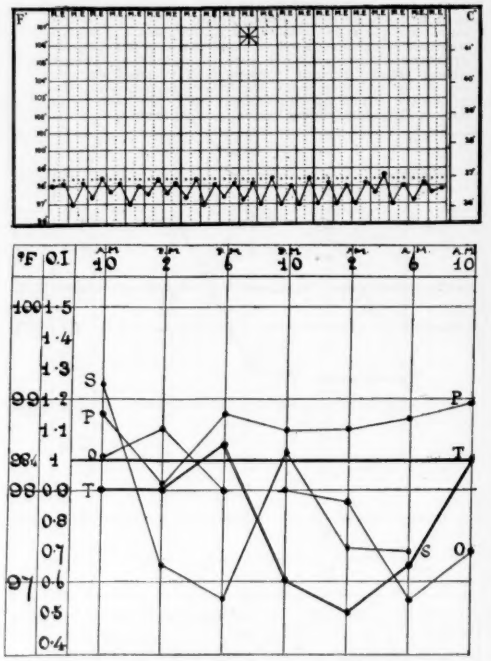
CASE 13.—Female, aged 23 years, single. No family history of tuberculosis. Past history: "Inflammation of the lungs" when 4 years of age; pleurisy, left side, nine months before admission. Present illness: Cough present; expectoration white; no pain and no hæmoptysis; had lost weight; no night sweats. Sputum: Tubercle bacilli present. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the right upper lobe and of the upper and lower lobes on the left side. This patient left the hospital after a stay of 68 days *in statu quo*. She lost 2 lb. in weight.

CHART XIV. (Group 2*a*).



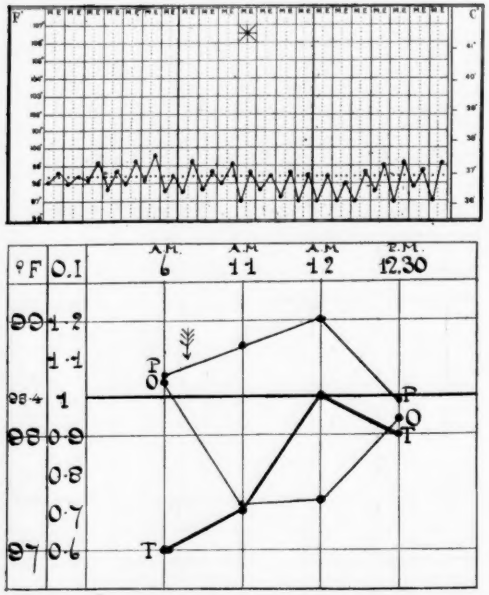
CASE 14.—Female, aged 26 years, married. No family history of tuberculosis. Past history: Good health until 16 months before admission, when a cough developed during pregnancy. Present illness: Cough present, especially at night; expectoration muco-purulent; no pain; hæmoptysis, streaks of blood occasionally; emaciation, lost 7 lb. in 2½ months; no night sweats; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the right upper lobe. Excavation of the left upper lobe and softening of the left lower lobe. The patient was under observation for 87 days, and improved, gaining 6¼ lb. in weight.

CHART XV. (Group 2*a*).



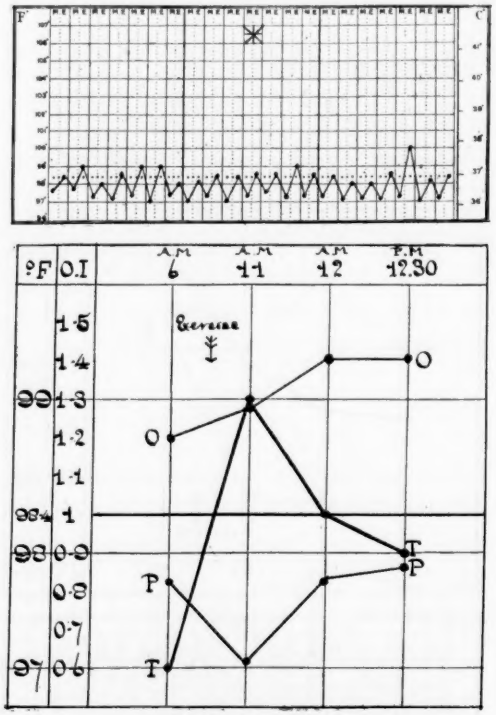
CASE 15.—Female, aged 24 years, married. No family history of tuberculosis. Past history: Pleurisy 7 years and 8 months before admission. Present illness: Cough present, especially in the mornings; expectoration thick and greenish; no pain; hæmoptysis on three occasions—9 months, 8 months, and 6 weeks before admission; had been gaining weight lately; night sweats formerly, but not now; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration and softening of the upper and lower lobes on the left side. This patient improved generally, gaining 8¾ lb. in 87 days.

CHART XVI. (Group 2*b*).



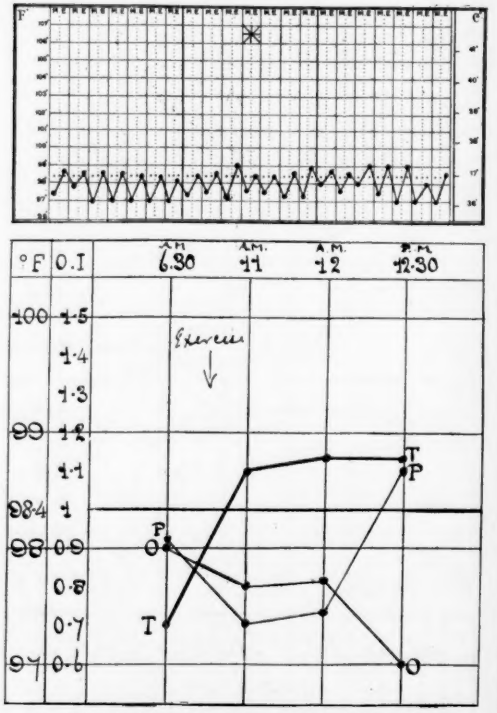
CASE 16.—Female, aged 40 years, married. No definite family history of tuberculosis, though a half-brother had died at the age of 15 from "bronchitis." Past history: Enjoyed good health until two years before admission when she caught a chill. Cough has persisted ever since. Present illness: Cough only at night; expectoration muco-purulent; no pain; hæmoptysis on three occasions; had gained 6½ lb. in weight just before admission; night sweats previously, but not recently; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the upper and lower lobes on the right side. Infiltration and softening of the upper and lower lobes on the left side. During a stay of 90 days in the hospital the patient gained 12 lb. in weight and improved considerably.

CHART XVII. (Group 3*a*).



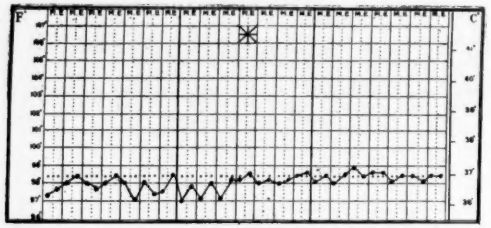
CASE 17.—Female, aged 24 years, married. No definite family history of tuberculosis. Past history: Well until two years before admission; insidious onset with lassitude accompanied by cough. Present illness: Cough persistent; expectoration muco-purulent; no pain; hæmoptysis slight, one week before admission; emaciation, great loss of weight; night sweats absent; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the upper and lower lobes on the right side. Excavation in both the upper and lower lobes on left side. During a stay in the hospital of 87 days the patient improved and gained 7 lb. in weight.

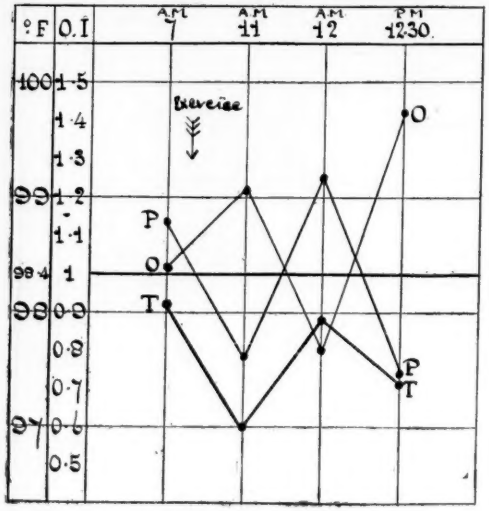
CHART XVIII. (Group 3*a*).



CASE 18.—Female, aged 26 years, single. No family history of tuberculosis. Past history: Pleurisy on the left side 15 months before admission, but since then well up to five months previous to admission. Present illness: Cough present; expectoration muco-purulent; pain occasionally in the left side of the chest; hæmoptysis on three occasions during the week immediately preceding admission; some emaciation; night sweats formerly, but not now; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the right upper and lower lobes (apices). Old disease (second stage) of the left upper lobe, and old disease (third stage) of the left lower lobe. This patient was under observation for 102 days. In spite of a considerable gain in weight (14 lb.) she was discharged "not so well."

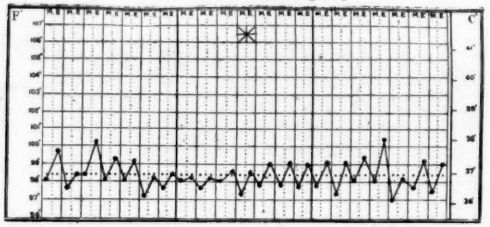
CHART XIX. (Group 3*a*).

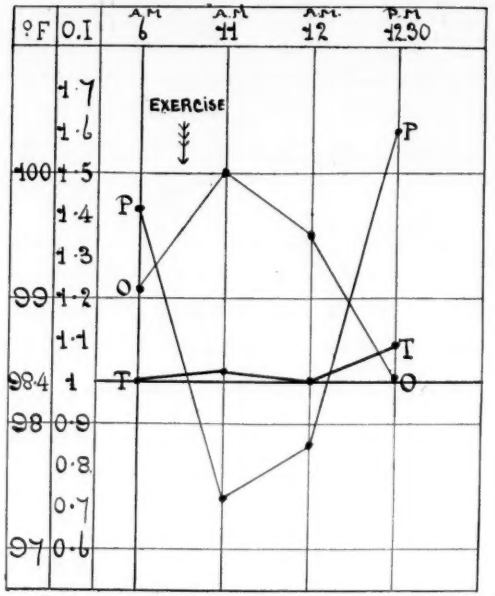




CASE 19.—Female, aged 32 years, married. Family history: Father had died from consumption. Past history: 18 months' history of cough, and then pleurisy on the left side seven months before admission. Present illness: Cough persistent for 18 months; expectoration muco-purulent; no pain; hæmoptysis, streaks of blood in the sputum; emaciation, some 3 lb. under average weight; night sweats previously, not now; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the upper and lower lobes on the right side; ? excavation in the lower lobe. Infiltration of the left upper and lower lobes with ? excavation of the lower lobe. The patient gained 1½ lb. in 91 days, and the general condition improved.

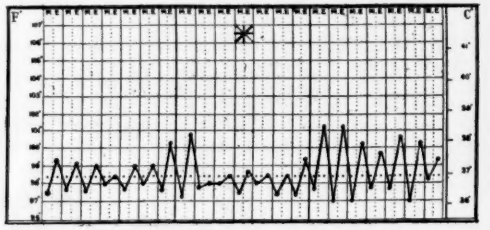
CHART XX. (Group 3*a*).

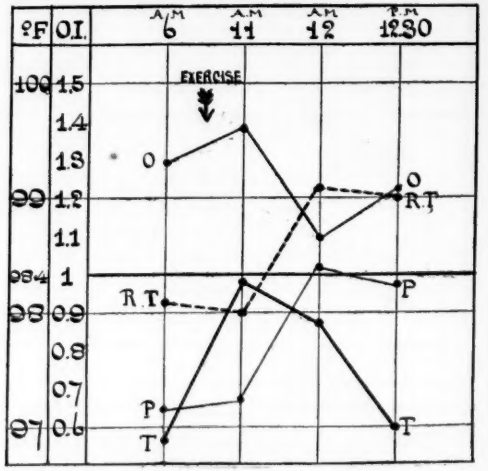




CASE 20.—Female, aged 32 years, a widow. Family history: Husband had died from pulmonary tuberculosis 10 months before the patient was admitted. Past history: Six months before admission the patient caught cold, which was accompanied by cough and expectoration; gradually got worse. Present illness: Cough troublesome; expectoration muco-purulent; pain occasionally in the left side; hæmoptysis absent; some emaciation; night sweats absent; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of both upper and lower lobes on the right side, also of upper and lower lobes on the left side. This patient improved very much under treatment, and was discharged after a stay of 139 days in hospital, having gained 9 lb. in weight.

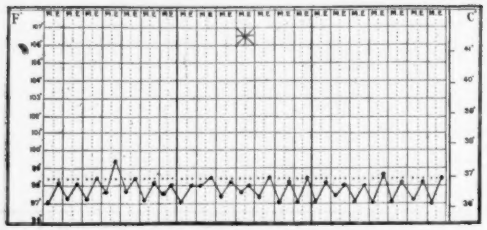
CHART XXI. (Group 3*a*).

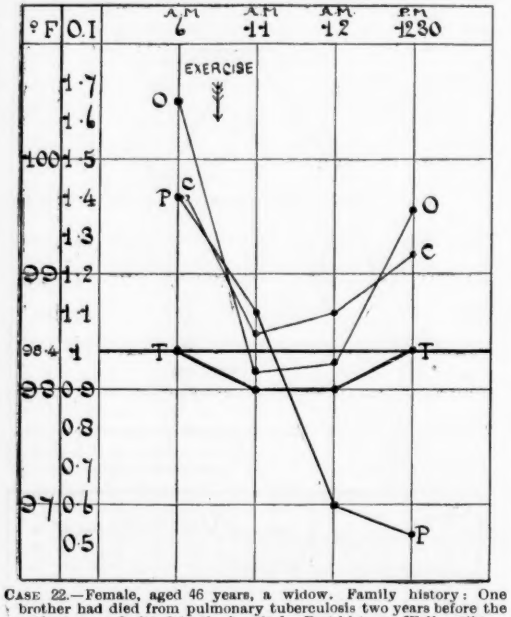




CASE 21.—Female, aged 26 years, single. No family history of tuberculosis. "Influenza" three years before admission. Present illness: Cough in the winter; expectoration copious; pain in the left side of the chest; no hæmoptysis; emaciation during the 12 months before admission; night sweats occasionally a month before admission; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. ? Infiltration of the right upper lobe. Infiltration and softening of both upper and lower lobes on the left side. This patient is still under observation and is improving somewhat.

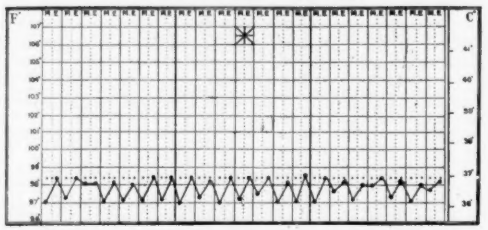
CHART XXII. (Group 3*a*).

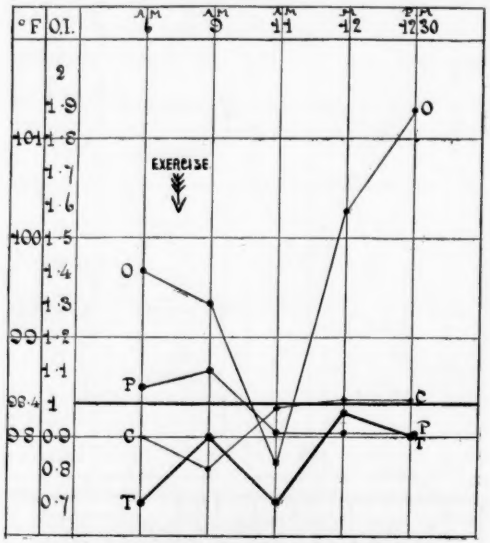




CASE 22.—Female, aged 46 years, a widow. Family history: One brother had died from pulmonary tuberculosis two years before the patient was admitted to the hospital. Past history: Well until two years before admission, when slight cough gradually developed. Shortly afterwards the sputum became blood-stained. Present illness: Slight cough; very little expectoration; no pain; hæmoptysis, streaks of blood in the sputum on several occasions; emaciation, some loss of weight; night sweats absent; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Excavation of the right upper lobe, infiltration of the right lower lobe. Infiltration of both upper and lower lobes on the left side. Tuberculous disease of the larynx. This patient improved considerably under treatment, which was continued for 85 days. She gained 11 lb. in weight.

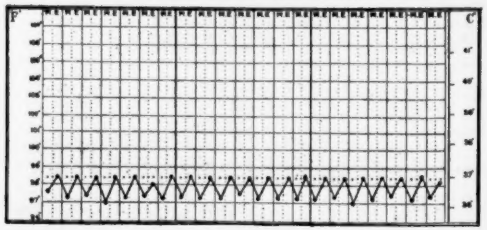
CHART XXIII. (Group 3*b*).

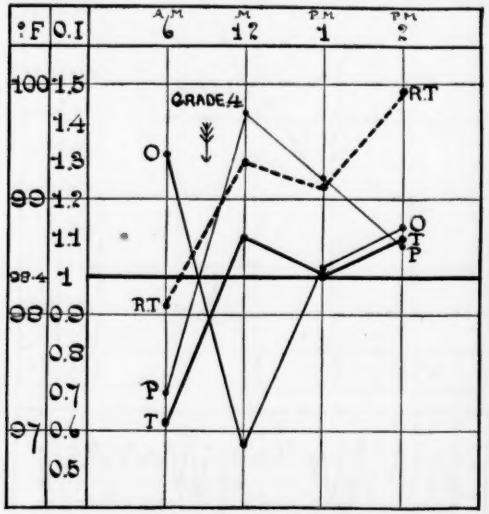




CASE 23.—Female, aged 46 years, a widow. Family history: Husband died from pulmonary tuberculosis 15 years before the patient was admitted to the hospital. Past history: Two years before admission the patient caught cold. This was followed by cough and expectoration, which persisted up to the date of admission. Present illness: Cough and expectoration present; no pain; hæmoptysis, streaks of blood in the sputum occasionally; emaciation, had lost weight; night sweats absent; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Excavation of the right upper lobe and infiltration of the middle and lower lobes on the same side. Excavation of the left upper lobe and infiltration of the lower lobe. During a stay in the hospital this patient improved. She gained 7¼ lb. in weight.

CHART XXIV. (Group 4*a*).





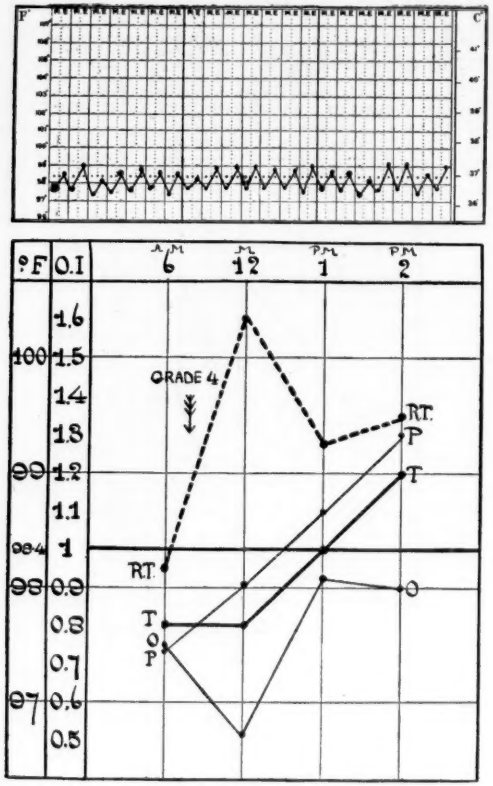
CASE 24.—Male, aged 24 years, married. No family history of tuberculosis. Hæmoptysis 14 months before admission. Tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the right lower lobe and of the left upper and lower lobes, with excavation at the upper lobe on the right side. The patient, after transference to the sanatorium, was able to pass through the various grades up to Grade 4 without any febrile reaction. On discharge he was 4 lb. heavier than his previous highest known weight. A little cough with morning expectoration persisted, and in the sputum were still found tubercle bacilli. He was discharged as "Arrest, with persistence of tubercle bacilli."

streaks of blood in the sputum on several occasions; emaciation, some loss of weight; night sweats absent; tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Excavation of the right upper lobe, infiltration of the right lower lobe. Infiltration of both upper and lower lobes on the left side. Tuberculous disease of the larynx. This patient improved considerably under treatment, which was continued for 85 days. She gained 11 lb. in weight.

Diagnosis: Chronic pulmonary tuberculosis. Excavation of the right upper lobe and infiltration of the middle and lower lobes on the same side. Excavation of the left upper lobe and infiltration of the lower lobe. During a stay in the hospital this patient improved. She gained 7½ lb. in weight.

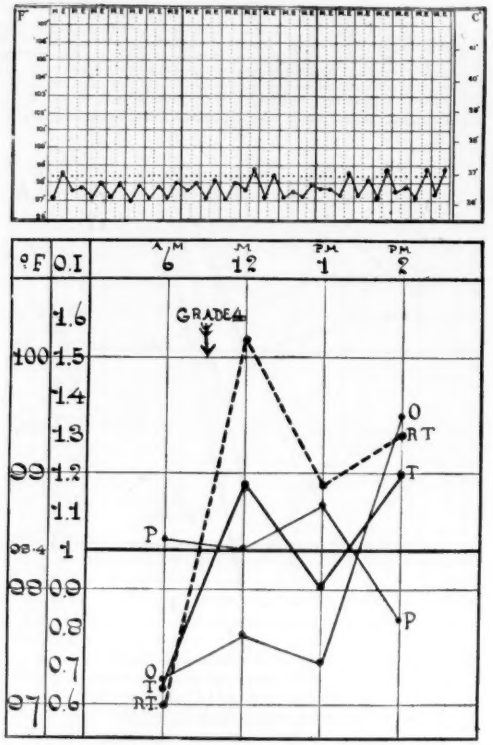
A little cough with morning expectoration persisted, and in the sputum were still found tubercle bacilli. He was discharged as "Arrest, with persistence of tubercle bacilli."

CHART XXV. (Group 4*a*).



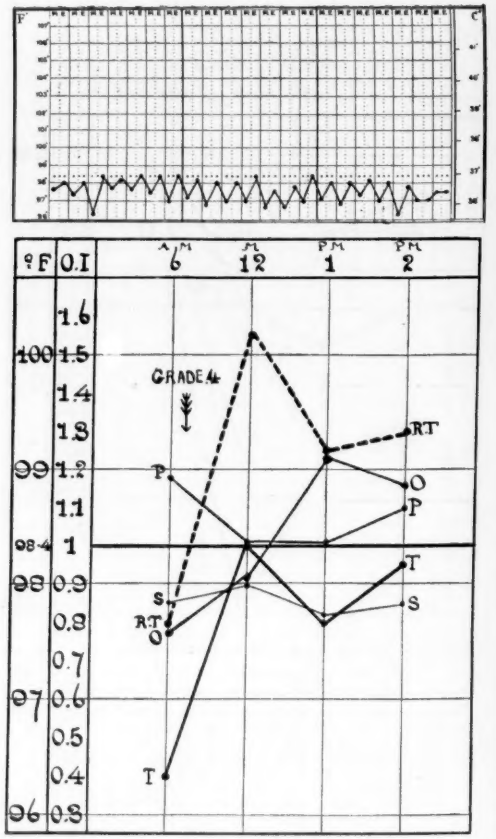
CASE 25.—Male, aged 29 years, married. No family history of tuberculosis. One year's history of colds and of feeling ill. Tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the upper and lower lobes of both lungs. This patient was able to perform the hardest possible work at the sanatorium without any rise of temperature. He gained in weight, and at his discharge was 5½ lb. over the previous highest known weight. He never quite lost all the sputum, and was discharged as "Arrest, with persistence of tubercle bacilli."

CHART XXVI. (Group 4*b*).



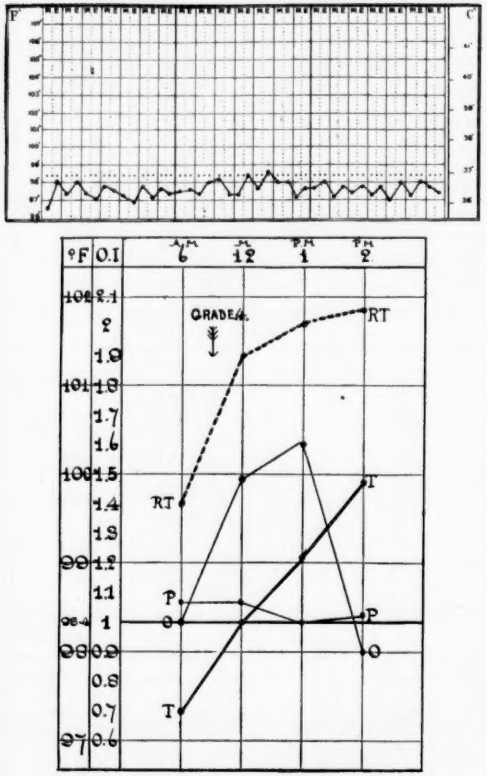
CASE 26.—Male, aged 19 years, single. No family history of tuberculosis. Past history: Two years before admission had pleurisy on the left side. Cough and expectoration began a little later. Tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the left lower lobe. ? infiltration of the right lower lobe and fibrosis of the left upper lobe. The patient satisfactorily performed Grade 4 without rise of temperature. He gained weight to the extent of 9lb. above the previous highest known weight. He was discharged from the sanatorium as "Arrest, with persistence of tubercle bacilli."

CHART XXVII. (Group 4*b*).



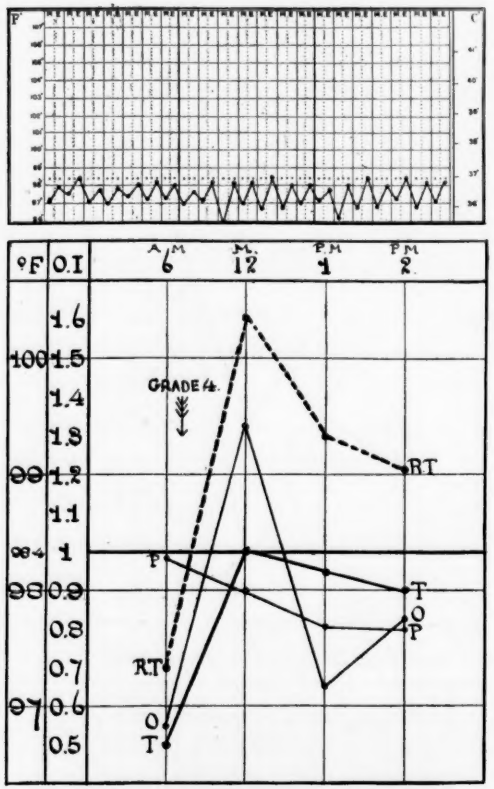
CASE 27.—Male, aged 18 years, single. No family history of tuberculosis. Seven years' history of illness with an insidious onset. Tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the right upper lobe. This patient was discharged from the sanatorium, where he performed Grade 4 without any rise of temperature, as "Arrest, with persistence of tubercle bacilli." His weight on discharge was equal to the highest known previous weight.

CHART XXVIII. (Group 4*b*).



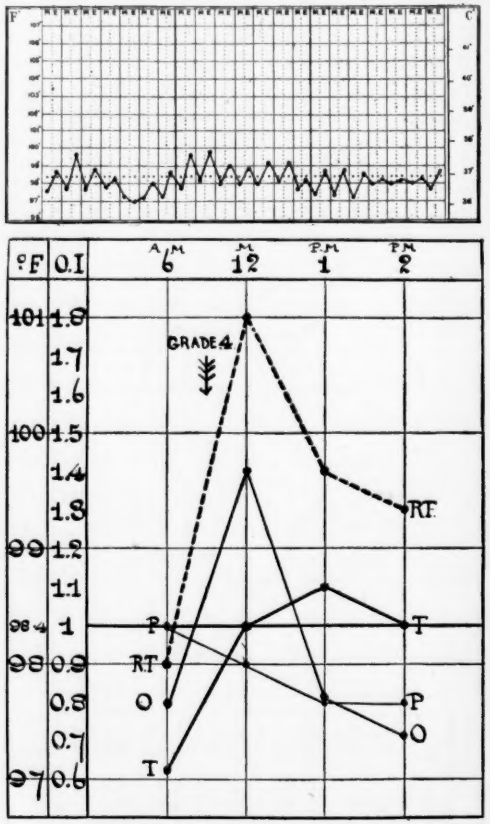
CASE 28.—Male, aged 33 years, married. No family history of tuberculosis. Bronchitic symptoms for one year before admission. Tubercle bacilli in sputum. Diagnosis: Infiltration and excavation of the upper lobes on both sides. At the sanatorium the patient was gradually got up to Grade 4, when he had a febrile reaction to 100·2° F. He is now doing well, and the sputum has markedly diminished in amount. He has gained over 1 st. in weight.

CHART XXIX. (Group 4*b*).



CASE 29.—Male, aged 21 years, single. No family history of tuberculosis. Past history: On two occasions, four years and six months respectively, before admission the patient had to leave off work on account of debility. Tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of the upper lobes on the right and left sides. This patient was able to perform the labour of Grade 4 at the sanatorium, lost his cough and expectoration, and when he left was 6½ lb. heavier than his previous highest known weight. "Arrested."

CHART XXX. (Group 4*b*).



CASE 30.—Male, aged 45 years, single. Family history: Mother and one brother had died from tuberculosis. Past history: Ten years previous to admission the patient had had a hæmoptysis. Tubercle bacilli in sputum. Diagnosis: Chronic pulmonary tuberculosis. Infiltration of all lobes of both lungs. The patient is still under treatment, and has been doing the labour of Grade 4. As might be expected, the progress is slow.

research, the anomalous pneumo-streptococcus, the repeated recovery of which has been a feature of the research, has, for convenience and following Ortner's terminology, been designated as the micrococcus pneumoniæ.

Of the 61 charts in the original manuscript only 30 have been selected for publication owing to considerations of space and the difficulty of reproducing such a large number.

Reading of Charts.

The recognition of certain salient points is a necessary preliminary to any attempt at reading the charts.

The common base line of every chart represents a temperature of 98·4° F. and an opsonic index of 1·00; for convenience one degree of temperature corresponds to four divisions of the opsonic scale. The normal limits of the tuberculo-opsonic index are arbitrarily fixed as lying between 0·80 and 1·20. With the exception of the micrococcus catarrhalis it has been determined in the course of numerous experiments that the defined above wide limits are fully adequate in the case of the staphylococcus, most strains of the micrococcus pneumoniæ, the bacillus of Friedländer, the bacillus coli, the diplococcus pneumoniæ. The intracellular digestion of the micrococcus catarrhalis after an incubation of only ten minutes renders accurate counting impossible, so that any but wide variations of the opsonic index should be rejected as being inconclusive.

The degree of variation of the opsonic curves is of paramount importance; while readings of the tuberculo-opsonic index above 1·7 and below 0·4 are very uncommon, the range of variation of the other organisms is far greater. Further, whereas a temperature of 102° would in the case of active tuberculosis call for serious comment the tuberculo-opsonic index of 2·1 which corresponds with it on the opsonic scale is of far greater significance. It is essential to emphasise the above considerations.

Apart from the value of abnormal indices as evidence of infectivity certain contrasts manifest themselves to a greater or lesser degree in some of the charts. An attempt has been made to make this apparent in the arrangement of the charts. To consider this in more detail. An inverse relationship of the blood curve to the temperature is observed in ten charts. The blood curves are inverse in eight cases. In other charts this inverse relation cannot be traced, though in a series high indices to the tubercle bacillus are opposed to low indices to other organisms, or *vice versâ*.

The inverse relation of the temperature to the elaboration of protective substances in acute bacterial infections is undisputed—e.g., acute lobar pneumonia, Mediterranean fever, typhoid fever, and streptococcal infections—and to a certain degree in acute tuberculosis. The recurrence of suggestive correlations between the temperature and blood curves in the protocols points to the complex rather than the simple origin of the fever in pulmonary tuberculosis.

The first cases presented are those belonging to Group I.—i.e., "resting febrile" cases. They are subdivided as follows: (*a*) Infection by the tubercle bacillus and other organisms; (*b*) infection by the tubercle bacillus alone; and (*c*) no evidence of infection by the tubercle bacillus, but infection by other organisms.

The temperature charts record the morning and evening temperature of each patient during the ten days preceding and following the day on which the blood examination was carried out. This day is indicated by a star in most cases. T, Temperature curve. R. T., Rectal temperature curve. O, Tuberculo-opsonic index curve. P, Curve of the opsonic index to the pneumo-streptococcus. S, Curve of the opsonic index to staphylococcus. C, Curve of the opsonic index to micrococcus catarrhalis. L, Curve of the number of leucocytes per c.mm. of the blood. The arrows indicate that the patients took walking exercise or worked for varying periods of time immediately before the next following temperature was recorded and the second sample of blood drawn.

Table of Results.

TABLE I.

	Cases.
Group 1, "Resting Febrile."	
A. Infection by tubercle bacilli and secondary organisms	25
B. Infection by tubercle bacilli alone	2
C. Infection by secondary organisms alone	—
Group 2, "Ambulant Febrile, Resting Afebrile."	
A. Infection by tubercle bacilli and secondary organisms	3
B. Infection by tubercle bacilli alone	2
C. Infection by secondary organisms alone	—
Group 3, "Ambulant Afebrile."	
A. Infection by tubercle bacilli and secondary organisms	9
B. Infection by tubercle bacilli alone	3
C. Infection by secondary organisms alone	1
Group 4, "Working Afebrile."	
A. Infection by tubercle bacilli and secondary organisms	4
B. Infection by tubercle bacilli alone	7
C. Infection by secondary organisms alone	

TABLE II.

Subdivision.	Groups 1 and 2. Febrile.	Groups 3 and 4. Afebrile.
A.	28 (87·5 per cent.)	13 (54·1 per cent.)
B.	4 (12·5 ,,)	10 (41·6 ,,)
C.	0	1 (4·1 ,,)
Totals	32	24

Conclusions.

1. In nearly every case of open tuberculosis of the lungs the tubercle bacillus is the predominant infecting agent.

2. The blood examinations have shown that "secondary infections" do occur. In all cases "resting febrile" there was evidence of such infection. Even in the "ambulant afebrile" group such infection could not be excluded.

3. The temperature chart alone cannot determine the presence or absence of a secondary infection.

4. A consideration of the morbid anatomy of advanced tuberculosis, and of the uncontrolled auto-inoculations spontaneously occurring in such cases, precludes the hope of a successful issue from specific treatment directed against the secondary infections; the situation is more encouraging in afebrile cases.

It is a pleasure to record my indebtedness to the medical staff at the Brompton Hospital for generously placing their cases at my disposal, and to Dr. Paterson for selecting the Frimley patients for me. The work could not have been accomplished without the loyal coöperation and constant help of Dr. Cecil Clarke, assistant in the hospital laboratory.

CORNEO-SCLERAL TREPHINING

(LIEUTENANT-COLONEL R. H. ELLIOT'S OPERATION).

BY B. T. LANG, F.R.C.S. ENG., M.A., B.C. CANTAB.,

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IT is widely admitted that every kind of successful operation for primary glaucoma produces a leak and that within certain limits the success of the operation is proportional to the amount of leakage produced. In many operations the eventual leakage area is of uncertain size, and depends on the extent of the failure of scar formation in the wound. On this account the results obtained by such operations are far better in elderly people with feeble powers of repair than they are in middle-aged people whose wounds heal soundly.

Lieutenant-Colonel R. H. Elliot, I.M.S., has solved the problem. From beneath a conjunctival flap he removes a large portion of the corneo-sclerotic with a trephine. The resulting hole is too wide to become occluded by scar tissue. But in order to obtain efficient leakage the hole must be made into the anterior chamber. The aqueous can then escape into the spaces of the subconjunctival tissue.

So far as I am aware, all the cases of failure of this operation have resulted from one of two causes—either because the trephine hole is too small and gets blocked by scar tissue, or because it is made too far back (Fig. 5) and gets blocked sooner or later more or less completely by the iris or iridic exudate.

The description of the operation may conveniently be divided into preliminary considerations and three stages—namely: (1) The reflection of the conjunctivo-corneal flap; (2) the act of trephining; and (3) the treatment of the trephined disc and of the iris.

Preliminary Considerations.

Choice of site of operation.—It is usual to make the trephine hole above, so that the upper lid may cover and protect it; above and below the limbus extends further on to

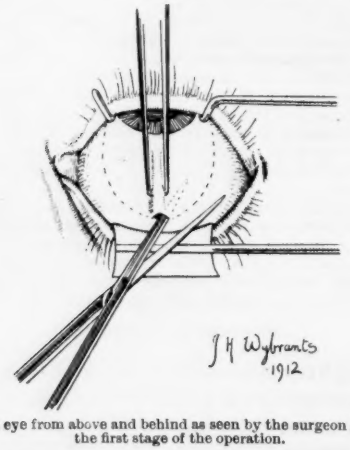
the cornea, and therefore in these situations it is easier to get well into the anterior chamber. If the operation is performed at the side of the cornea care must be taken that the conjunctivo-corneal flap is carried far enough forward.

Size and shape of the flap.—It is essential that the flap be made large, so that slight displacement will not leave the hole uncovered. So long as this condition is fulfilled the shape of the flap is unimportant.

Stage 1.—The Reflection of the Conjunctivo-corneal Flap.

The eye is cocainised, the usual toilet of the conjunctiva performed, and a speculum introduced. The patient is asked to look down, and the conjunctiva is seized with a pair of conjunctival forceps at a point about 8 mm. from the corneo-scleral junction directly above the centre of the cornea. This fold of conjunctiva, the axis of which is a continuation of a radius of the cornea, is cut through with scissors at that end which is distal to the corneal margin. The flap is roughly triangular in shape, and is made by continuing this incision in both directions in a suitably curved manner. (Fig. 1.)

FIG. 1.

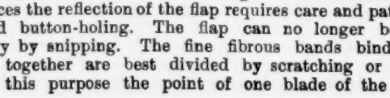


Right eye from above and behind as seen by the surgeon during the first stage of the operation.

The incision should end on either side at points about 3 to 5 mm. from the corneal margin at a level with the junction of the upper and next quarter of the cornea. This part of the operation is most easily carried out by opening the blades of the scissors, slipping one blade under the conjunctiva and closing them, as shown in the diagram. This is a far better method than taking small snips with the points of the scissors. The flap is then dissected off the underlying sclera by snipping boldly with sharp pointed scissors which are held flat against the surface of the sclera. If the flap is held with forceps it is easily torn. It is better to draw it gently towards the centre of the cornea, using small pieces of folded lint or pledgets of cotton-wool held in forceps. These swabs can be used to absorb any blood that exudes from the cut vessels. Bleeding is usually slight, but in cases of acute glaucoma or in cases where the conjunctival vessels have been recently engorged by the use of perchloride or other irritant lotion there may be considerable hæmorrhage.

In the normal eye it is quite easy to separate the conjunctiva from the sclera right up to the limbus, but in cases which are the subjects of chronic glaucoma the conjunctiva

FIG. 2.



Desmarres' secondary cataract knife.

is bound down to the underlying tissue for as much as 3 to 4 mm. from the corneal margin. Under these circumstances the reflection of the flap requires care and patience to avoid button-holing. The flap can no longer be raised easily by snipping. The fine fibrous bands binding the two together are best divided by scratching or cutting. For this purpose the point of one blade of the scissors may be used. But this part of the operation is greatly simplified if the surgeon uses a Desmarres' secondary cataract knife which is modified by having the whole of the blunt end sharpened (Fig. 2). With the aid of this instrument the reflection of the flap is much less difficult, and takes about a quarter of the time. There is another advantage; in all operations depending for their success on leakage it is as desirable to cause as little damage as possible at the site of operation, because damage leads to inflammation, and inflammation leads to an excessive formation of scar tissue. The clean cut of a knife is much less likely to set up inflammation than is the scratching with the point of the scissors, and is therefore to be preferred on these grounds alone.

The sub-conjunctival tissue in the neighbourhood of the limbus is denser than elsewhere; when this region is approached the base of the retracted flap has a roll-like appearance which has been compared to the corona glandis penis. The reflection of the flap is continued until a small portion of the superficial layer of the cornea has been reflected. (See Fig. 4.)

Directly the white opaque fibres of the limbus (or sclera) have been divided, or directly the dissection has been carried beyond them, the light passes through the underlying translucent cornea and the bottom of the wound appears black. This is a landmark of great importance, and until it is seen the flap has not been carried far enough forward. The cornea should be split up for from ½ to 1 mm. When the central part of the base of the flap has been reflected far enough attention should be paid to the edges. These should be reflected back to about the same level. The site for trephining will then be well exposed and not half covered by a hood of conjunctiva. This is important as it is very difficult to trephine at the bottom of a pocket.

Stage 2.—The Act of Trephining.

The trephine should be 1·5 or 2 mm. in diameter. It should be quite sharp, so that the least possible damage may be done to the edges of the hole. The trephine and holder should be light in weight so that the least alteration in resistance may be easily appreciated. The holder should be so shaped that it can be rotated between the fingers with facility, and should have a shoulder to prevent the fingers slipping down on to the blade during operation. It is further advisable to have some means of preventing the blade being damaged during sterilisation. In the pattern illustrated, which has been made by Messrs. Weiss, the blade can be drawn within the handle and clamped in that position. (Fig. 3)

FIG. 3.

The solid part of the upper figure is the instrument ready for use. The blade can be pushed out to suit the operator. The skeleton outline represents the blade drawn into the handle for protection during boiling. The middle figure is the steel tube, and the two lower figures are the handle and its nut, which clamps the blade and holds it firm.

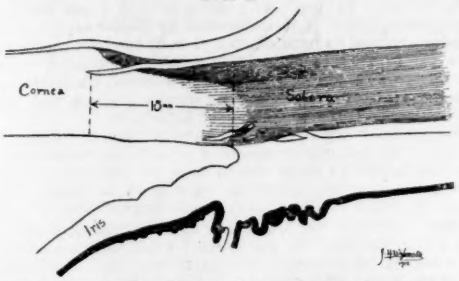
When the conjunctival flap has been reflected the trephine is placed on the prepared area as far forward as it is possible without button-holing the flap. Small rotatory movements are given to the trephine by rolling it backwards and forwards between the thumb and finger (cigarette rolling motion). Only the slightest possible amount of pressure should be applied. Shortly after the trephine has started cutting it is advisable to remove it and to inspect the cut to see that it is in the right place. If it is found that the trephine has slipped a new hole should be started. Great care should be taken to keep the axis of the trephine perpendicular to the area of contact as it is highly desirable that one side of the hole should not be cut through much before the other.

When the trephine has cut through the corneo-sclerotic

there is a feeling as if the end of the instrument were being sucked into the wound. This is only felt if one is using a light trephine and if the trephine is so sharp that no pressure has to be used to make it cut. As it is a point of great importance to know when one is through, it is a point of equal importance that the trephine be light and sharp.

The trephine is now removed. If the disc has not been cut free all round the experienced operator may replace the trephine and cut through the tissue retaining the disc. It is a great deal safer to deal with the disc with forceps and scissors, as described below. The lens may easily be injured by persevering too long with a blunt or heavy trephine. (Fig. 4.)

FIG. 4.



Drawn from a section of a normal eye. The eye was excised during an operation for sarcoma of the upper jaw and orbit. It was fixed in 5 per cent. formalin in normal saline. A corneo-conjunctival flap was reflected from above as described in this paper. Portions of the eye were cut away on a freezing microtome until the section passed vertically through the centre of the cornea. With the aid of a small amount of gum a slide was frozen on to the cut surface. The eye was now thawed off the microtome, and the slide with the eye still frozen to it was reversed, placed on the microtome, and with the aid of a little gum frozen on to it. The eye was then cut away once more until a very thin layer was left. A cover-slip was laid on and the whole was allowed to thaw. This procedure was adopted to avoid any of the shrinkage effects associated with the usual methods of embedding tissues for section. This particular section varied in thickness in different parts, from 12 to 28 μ. The drawing was made from the section. The dotted lines show the amount of the corneo-sclera removed by a 1·5 mm. trephine. It will be seen that the splitting of the cornea enables one to make the trephine hole so far forward that it is impossible for it ever to become blocked by iris or iridic exudate. Should be compared with Fig. 5.

Stage 3.—The Treatment of the Trephined Disc and of the Iris.

When the disc has been cut through one of three things may happen to both the iris and the disc: (1) The iris may prolapse through the wound; (2) it may bulge into the wound; or (3) it may remain in its normal position. If the iris prolapses or bulges it forces the trephined disc completely or partially out of the wound; while if it remains in its normal position the disc may stay in the hole, or it may be sucked into the anterior chamber.

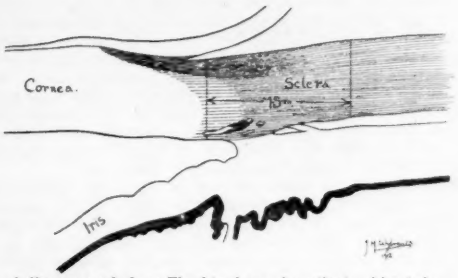
The disc has to be removed and the iris, if prolapsed or bulging, has to be dealt with. The disc may be removed by seizing it with iris forceps and cutting it free in the wound from its attachment to the sclera with a pair of fine sharp-pointed scissors. The object is to complete the trephine cut if possible. If the disc is merely drawn out of the hole and as much as protrudes cut off, it is quite possible that a flat section of the disc may be left at the bottom of the hole so as to occlude it completely. This is particularly likely to occur if the trephine hole has been made too far back, where the under surface of the disc will be adherent to the base of the iris.

The bulging iris may present a slight difficulty during this stage; it may be convenient to snip the most prominent part with a pair of scissors and allow the aqueous to escape. The iris will then subside and the disc can be dealt with as above described.

If the disc has receded into the anterior chamber it can generally be washed out by the use of an irrigator. In these cases the disc is usually adherent to the edge of the hole, and it comes back into the hole with a hinge-like movement. It may be easily seized with forceps and removed, observing the precautions already mentioned.

With regard to the iris, if it does not readily return as much as remains outside the eye should be removed with scissors. If it returns but the pupil does not become central the cornea should be gently stroked with the back of a curette or an iris repositor starting from the side of the cornea opposite the hole and stroking towards the hole. The cornea is very likely to be dry and should first be moistened. If the pupil still remains drawn up it is best to introduce Liebreich's or other iris forceps through the hole, draw out some of the iris, and do a small iridectomy. The edges of the iridectomy will easily be freed by stroking the cornea as above described. If the hole has been made too far back an iridectomy must be performed, as otherwise the operation is almost bound to fail. (Fig. 5.)

FIG. 5.



A diagram made from Fig. 4 to show where the trephine hole would come if the flap is insufficiently reflected. Eyes that have been operated upon in this manner are relieved for a time, but later the tension again rises. In such eyes a bridge of white tissue of the limbus or sclera is seen to intervene between the trephine hole and the cornea.

The conjunctival flap is now drawn into its original position and the upper lid lifted over it as the speculum is removed. If the flap has been made from below it is better to put in one stitch, as flaps in this position are easily displaced. A pad and bandage are applied.

In this short consideration of a comparatively new operation it has not been thought advisable to multiply unnecessary detail, particularly as those practising it will have already had considerable experience in the ordinary technique of ophthalmic operations.

I am greatly indebted to Lieutenant-Colonel Elliot for teaching me the technique of this most important operation. No other operation for glaucoma is so certain of success. The wound in the corneo-sclera is so small that the contents of the globe cannot be extruded, and the restless patient is less able to do permanent damage to the sight by screwing up his lids or hitting his eye. Provided that the trephine hole is made well into the anterior chamber and the wound is freed from the trephined disc and displaced iris, the success of the operation is assured.

I should like to take this opportunity of thanking Surgeon-General P. H. Benson, I.M.S. (retired), for so kindly permitting me to work under Lieutenant-Colonel Elliot at the Government Ophthalmic Hospital, Madras.

I append a list of publications by Lieutenant-Colonel Elliot on trephining: 1. Preliminary Note on a New Operative Procedure for the Establishment of a Filtering Cicatrix in the Treatment of Glaucoma, *Ophthalmoscope*, December, 1909. 2. The Operative Treatment of Glaucoma, ibid., July, 1910. 3. Trephining for Glaucoma, ibid., November, 1910. 4. The Operation of Trephining for Glaucoma, its History, its Technique, its Indications, and its Results (an address delivered at the Oxford Ophthalmological Congress), ibid., July, 1911. 5. Simple Trephining for the Relief of Glaucomatous Conditions (a paper read before the Section of Ophthalmology at the seventy-ninth annual meeting of the British Medical Association in Birmingham, July, 1911). 6. The Operation of Simple Trephining of the Sclera for the Relief of Glaucoma, *Ophthalmology*, April, 1911. 7. A Modified Instrument for the Performance of Simple Trephining for the Relief of Glaucoma, *Ophthalmoscope*, January, 1912. 8. Some Technical Details of the Operation of Simple Trephining, Ophthalmological Society's Transactions, Vol. XXXI., June 8th, 1911.

Cavendish-square, W.

THE TREATMENT OF CONDYLOMATA ACUMINATA.

BY DAVID WATSON, M.B., C.M. GLASG.,
SURGEON, GLASGOW LOCK HOSPITAL.

WARTY growths are a not infrequent accompaniment of gonorrhœal infection, especially in patients who have an insufficient appreciation of the advantages of personal cleanliness. The vegetations may vary in size from a pin-point to a cauliflower mass. They adopt the physical characteristics of the tissue from which they spring, whether mucous membrane or skin, but they all have essentially the same histological structure. The sites most favoured by these growths are, in the male, the inner surface of the prepuce, the coronal sulcus, the meatus urinarius, and the surface of the glans. A considerable growth within the sac of a tight prepuce may give rise to sloughing and sinus formation, or a strawberry mass may project from the preputial orifice. In women the areas most prone to be affected are the inner and outer surfaces of the labia, the base of the clitoris, the vaginal walls, the cervix, and also around the anal orifice. Pregnancy favours the formation of large masses, owing probably to the increased vascularity of the parts.

Condylomata acuminata occur more frequently in women than in men, and in the female they attain much greater dimensions. Large cauliflower masses may cover the vulva and perineum, while numbers of small warts occupy the adjacent skin and mucous surfaces. So long as they remain untreated they are kept moist by an offensive secretion containing the detritus of macerated epithelial and pus cells and numerous micro-organisms. Histologically, they are composed of elongated branching papillæ, covered with an enormously thickened epithelium. The papillæ are supplied with capillary loops, surrounding which are frequent patches of small round-celled infiltration. Special nerve endings found in the epithelial layer are connected with a fine network of nerve fibres in the base of the papillæ. The main bulk of the hypertrophy is due to the rapid proliferation of the swollen cells of the Malpighian layer, which is therefore greatly increased in thickness. Between these epithelial cells numerous mononuclear and polynuclear wandering cells are found. The surface cells which form the thin horny layer tend to undergo maceration and desquamation, and minute areas of necrosis allow of serous and sometimes hæmorrhagic oozing.

The customary association of condylomata acuminata with gonorrhœa naturally suggests that the formation of these growths is induced by the irritation of the gonorrhœal discharge. The gonococcus has not been demonstrated in sections, but other organisms such as streptococci, staphylococci, and more recently spirilla have, of course, been found. Whether these papillary hypertrophies are the product merely of a mechanical irritation, or whether they owe their existence to the action of some specific organism, acting on a suitably prepared soil, is a problem still awaiting solution.

Treatment.—The treatment which conspicuously suggests itself for all condylomata acuminata is excision with suture of the wound under local anæsthesia. Ligature of each portion separately or destruction by the use of caustics and cauteries are only mentioned to be dismissed as barbarous both in use and effect.

But even excision has disadvantages which prevent it from being of universal application. When large masses, such as are not infrequently found in females, have to be dealt with a general anæsthetic is required, and from one to two hours may be employed in removing several separate cauliflower excrescences as well as numbers of smaller growths. The time is mostly occupied in controlling hæmorrhage from the very numerous bleeding points. When the most thorough removal possible has been effected and the remaining skin and mucous surfaces examined, these are found to be seeded with minute papillary vegetations, which one is tempted to treat with the thermo-cautery while the patient is still under the anæsthetic. The latter procedure is worse than useless, as it destroys only a fraction of the minute growths, healing is painful and slow, and the results of the cicatricial deformity may be deplorable, involving perhaps loss of the sexual function or control of the bladder. But even when the temptation to use any cauterising procedure is resisted the result will be disappointing. Recurrence, not of large masses but of numerous smaller vegetations, is certain; all of the wounds will not heal by primary union as the maintenance of a clean field is impossible, and one cannot foresee what will be the ultimate results of the cicatricial contraction. If, then, there are other methods of treatment which have any prospect of success they demand careful consideration. Several procedures have been advocated; formalin applied to small areas at a time is effective, but slow and very painful, for which reason I have had to discard it; carbolic acid and chromic acid are useful in the case of small growths, and are most effective when used alternately, but both of these poisons must be used with caution; resorcin and starch in equal proportions make a useful paste, but it is difficult sufficiently to localise its action, and inflammatory irritation may be produced; salicylic acid 1 per cent. in precipitated chalk is recommended by Taylor as a dusting powder; chloral hydrate solution (1 in 8) has been suggested as a paint; tincture of iodine is another application which has its advocates. In my experience, however, the treatment which has been found to be most simple, effective, and free from objection is the application of lactic acid.

The mode of employment will depend upon the condition present. In the male circumcision is performed when necessary, pedunculated warts may be removed with scissors, and pure lactic acid applied to the base after the bleeding has been controlled. Other growths are treated with a continuous 1 per cent. wet dressing or the occasional application of a strong solution. In the female, when there are several large masses, each portion is isolated and kept surrounded by strips of lint wet with a ½ to 1 per cent. solution. The base of these growths may in addition be touched at intervals of a few days with the pure acid. Smaller growths are painted with the undiluted acid or a strong solution, and when there is a large field of minute growths the wet dressing is employed. The dressings are changed as frequently as the amount of discharge necessitates, and at each change the parts are thoroughly bathed with an antiseptic, in the case of females a sitz bath being used. The largest masses wither and drop off, small growths are inhibited, and cure results without the formation of any cicatrices and without pain. The only disadvantage I have encountered in the use of lactic acid is the occasional occurrence of a general erythema when the treatment is pushed too energetically. This erythema is of trifling significance and quickly subsides on the temporary withdrawal of the acid and the substitution of a zinc and calomel dusting powder or ointment. On this account, however, it may be necessary when large areas are involved to intermit the treatment for two days in each week, and to protect the surrounding healthy tissues with vaseline in order to discourage excessive absorption of the acid. As soon as the seats of gonorrhœal infection—urethra, cervix, rectum, &c.—can be reached appropriate treatment is initiated, and this, combined with strict cleanliness, has an important influence in preventing the appearances of fresh growths.

The histories of a few cases kindly furnished me by Sister Frisby, of the Glasgow Lock Hospital, will illustrate the method and its results.

CASE 1.—The patient, aged 13, was admitted on Sept. 1st, 1910, suffering from gonorrhœa and medium-sized warty growths in the anal region. The warts were treated by cyllin sitz baths three times daily and application of pure lactic acid once daily. In four days the warts began to improve, and they had completely disappeared in 12 days. Patient was dismissed on Sept. 16th.

CASE 2.—The patient, aged 21, five months pregnant, was admitted on August 22nd, 1910, with gonorrhœa and numerous warty vegetations on the skin and mucous surfaces of the labia majora. Continuous wet dressing of 1 per cent. lactic acid was employed. Improvement was manifest on August 27th, and completed on Sept. 8th. Patient was dismissed on Sept. 10th.

CASE 3.—The patient, aged 19, was admitted on Sept. 5th, 1910, suffering from gonorrhœa and condylomata acuminata. Large masses covered the vulva and perineum and extended beyond the anus. The whole growth was as large as a medium-sized cauliflower. The patient at first had to be isolated on account of the very offensive odour. She had been previously treated for a short time in another hospital. The growth had appeared and grown with great rapidity three months before admission. After being cleaned up with

a ½ per cent. lactic acid solution the masses were separately surrounded with strips of lint soaked in 1 in 100 lactic acid. In two days portions began to drop off and in seven weeks all traces had disappeared without the formation of any cicatrices whatever.

These cases sufficiently indicate the lines of treatment and the results to be expected in most instances, but certain varieties, especially where complicated with syphilis, are more resistant. The only claim I make for this treatment is that it is the most generally satisfactory of the many systems with which I have experimented.

Glasgow.

THREE CONSECUTIVE CASES OF CARCINOMA OF THE JEJUNUM.

BY E. T. TATLOW, B.A., M.D., B.CH. DUB.,
HOUSE SURGEON, LEEDS GENERAL INFIRMARY.

STATISTICS in the literature on the subject of intestinal carcinomata differ considerably with regard to the relative frequency of cancer of the small intestine. According to Sutton, in every 100 cases of intestinal cancer 75 occur in the rectum, 23 in the large intestine, and 2 in the small. Possibly these statistics indicate that carcinoma of the small intestine is rarer than it really is. All authorities agree, however, that carcinoma becomes more infrequent in the higher portions of the intestinal tract, and that carcinoma of the ileum is not so uncommon as carcinoma of the jejunum. The three cases with which these notes deal occurred within six months in Mr. B. G. A. Moynihan's wards at the Leeds General Infirmary. All three patients showed the characteristic group of symptoms due to the toxæmia of intestinal putrefaction, together with the mechanical obstruction of the bowel—namely, impaired digestion, loss of appetite, loss of weight, loss of colour, and increasing constipation, accompanied by colic more or less severe in character.

CASE 1.—The patient, a man aged 68 years, was admitted to hospital on Sept. 12th, 1911. He stated that he had always been a sufferer from constipation, but that during the 18 months preceding his admission he had had several severe attacks of what he at first thought was acute indigestion, these attacks taking the form of griping pain, flatulence, swelling of the abdomen, and obstinate constipation. In the middle of August, 1911, he had a very severe bout of griping pain, a pain which he describes as resembling the colic experienced after taking a strong purgative. These pains were intermittent in character, coming on for several hours two or three times a week. He noticed that his abdomen was becoming permanently distended, and that he was rapidly losing flesh. He vomited occasionally, but never any large amount. During the last weeks before his admission into hospital the bowels never moved without enemata. From the commencement of the August attack to the day of his admission he lost nearly 2 stones in weight.

Mr. Moynihan operated on Sept. 11th. An incision was made over the right rectus, and the muscle was split longitudinally. On opening the peritoneal cavity, the stomach, duodenum, and gall-bladder were found to be normal. A large cylindrical stony-hard mass was found in the upper portion of the jejunum, some 4 feet from the duodeno-jejunal flexure. The primary growth was confined to the bowel, but there were numerous secondary deposits in the glands of the mesentery. A resection was performed, removing 8 inches of jejunum above the growth, and 18 inches below it. The infected area of mesentery was excised with the bowel. The divided ends of jejunum were closed and a lateral anastomosis was performed.

The pathological report was to the effect that the tumour was a typical annular carcinoma. The patient left the hospital three weeks after the operation, and wrote to me recently saying that he was quite well, had put on weight, had a splendid appetite, and regarded his operation as "altogether a great success."

CASE 2.—The patient, a man aged 53 years, was admitted to hospital on Nov. 22nd, 1911. He gave a history of dyspepsia of 30 years' duration. On questioning him, it was elicited that by dyspepsia he meant occasional attacks of vomiting, a constant feeling of heaviness after meals, pyrosis, flatulence, and constipation. He attributed his poor digestion to lack of adequate daily exercise and to bending continually at his work. Three months before admission to hospital he had had an unusually severe attack of vomiting, being unable to retain any food for five days. At the end of five days he returned to his normal condition, but a week later he had a similar attack, these attacks continuing, with intermissions, up to the day of his admission to hospital.

In hospital the patient was able to vomit at will, and did so on several occasions when in discomfort. He had on no occasion vomited blood. The pain he suffered preceding the vomiting was always felt at a point half an inch to the left of the umbilicus and slightly above it. (As a matter of fact, it transpired later that the patient put his finger, in pointing out the seat of his pain, exactly over the site of the duodeno-jejunal flexure.) The history of the time of onset of pain was indefinite; sometimes his appetite was comparatively good, he ate heartily, and suffered no pain; on other occasions the pain would come on within ten minutes after a light meal. During the three months previous to his coming to hospital he lost 2 stones in weight.

On examining the abdomen a somewhat ill-defined tumour was felt near the umbilicus. The abdomen was thin-walled, and the skin was dry and of a dull earthy tint. The patient had many carious teeth and marked oral fœtor. The X ray report was as follows: "No pyloric obstruction. The stomach is rather on the small side, especially the pyloric half. There is some irregularity at the lesser curvature." The examination for occult blood in the fæces was positive.

A diagnosis of carcinoma, probably of the stomach, was made, and on Nov. 27th Mr. Moynihan operated. A right paramedian incision was made and the fibres of the rectus were separated longitudinally. On opening the abdomen the stomach was found to have markedly hypertrophied walls, but to be otherwise normal. The duodenum was normal in its first two parts, but at the duodeno-jejunal flexure there was a stony-hard, annular growth evidently obstructing the lumen of the gut considerably. The attachments of the peritoneum to the posterior abdominal wall were infiltrated with the growth. The boundary of the tumour on the right side reached just to the superior mesenteric vessels. After a somewhat difficult dissection the growth was separated from the posterior abdominal wall, great vessels, and pancreas without interfering with either the superior mesenteric artery and vein or the middle colic artery. The accessory middle colic of Waldeyer was found to be present, and was left intact. After the growth and accompanying glands had been isolated the duodenum was divided at a point two inches proximal to the flexure. The extensive glandular enlargement necessitated the resection of over 18 inches of jejunum together with the flexure. When this had been accomplished the proximal end of the jejunum was anastomosed to the stomach by means of a posterior vertical gastro-jejunostomy and the distal end of the duodenum was implanted into the jejunum, 6 inches below the gastro-enterostomy, by an end-to-side anastomosis.

The after-history of this case has been highly satisfactory so far. The patient made a good recovery, leaving the hospital three and a half weeks after the operation. Since then he has attended on several occasions, and he told me a few weeks ago that he was very well indeed, had no pain whatever, and was putting on weight. The pathologist reported the growth to be carcinomatous.

CASE 3.—The patient, who was 48 years of age, was admitted to hospital on Jan. 4th, 1912. He gave a history of three months' illness only. He persisted in the statement that he had been a perfectly healthy man up to three months previous to his entry to hospital. In October, 1911, he began to feel run down and weak and to suffer from pain in the right iliac region. When asked to describe the pain he called it a "dragging pain." He had frequent attacks of vomiting, the attacks having no definite relationship to meals or to diet, occurring sometimes immediately after food and sometimes two or three hours later. He never vomited blood but had melæna. He had lost 23 lb. in weight between October, 1911, and the date of his admission. He had suffered during these months from an extreme degree of constipation, using both enemata and drugs for its relief.

The man looked very ill indeed. He was lethargic, he had the yellowish-brown tint of a "pernicious" anæmia, the pulse was feeble and easily compressible, the tongue was coated with a white fur, and the breath was foul-smelling. A tumour could be felt in the right iliac fossa to the inner

side of the cæcum. The tumour appeared to be slightly mobile and could only be felt on deep palpation. The patient's blood-count was that of a secondary anæmia. The X ray report on the condition of the intestinal tract after a course of bismuth was as follows: "In 30 hours food has reached the rectum. The cæcum and ascending colon do not appear to be affected by the tumour as regards their outline."

A diagnosis of carcinoma of the ileum was made in this case, and Mr. Moynihan decided to operate. The man's general condition, however, was so very poor, and his degree of anæmia so marked, that it was deemed advisable to perform direct transfusion. The patient's brother expressed his willingness to allow himself "to be bled," and accordingly on Jan. 19th direct transfusion from the radial artery of the brother into the patient's median basilic vein was performed, the transfusion lasting 45 minutes. The improvement following this was marked, and on Jan. 27th Mr. Moynihan operated. A similar incision to that in the previous two cases was employed. On opening the abdomen a mass of adherent intestine with a hard tumour in its centre was found in the right iliac fossa. On examination it was obvious from the naked-eye appearances that the case was one of annular carcinoma. The primary growth was fairly low in the jejunum. An adhesion had formed to another loop of jejunum some five or six feet lower down, and this in turn had become involved in the growth. The ileum was also adherent to the mass at a point some inches from the cæcum. Excision was impossible owing to the length of the bowel involved and the fixation of the tumour, so a lateral anastomosis was performed between two loops of jejunum, proximal to and distal from the growth. The ileum, which was adherent to the mass but not obstructed, was not interfered with.

The after-history of this case was as follows. The patient never really rallied from the operation. The bowels were moved with difficulty. He could take scarcely any food and he died on Feb. 1st, five days after operation.

The pathological report on this case confirmed, as in the previous cases, the clinical diagnosis of primary annular carcinoma of the jejunum.

I am indebted to Mr. Moynihan for kindly allowing me to publish these notes.

Leeds.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on March 29th, Dr. STCLAIR THOMSON, the President, being in the chair.

Mr. E. A. PETERS showed: 1. Tonsils Enucleated by means of a 16 mm. Mackenzie Guillotine. (The PRESIDENT remarked that several years ago he had advocated the use of the guillotine in enucleating tonsils.) 2. Asthma with Swollen Middle Turbinals. The middle turbinals were œdematous and compressed the septum, a condition characteristic of nasal asthma in the exhibitor's opinion. 3. Tumour of the Left Antrum. The left maxillary antrum was expanded in every direction except towards the palate. The wall was everywhere hard.—Some doubt was expressed by several speakers as to the nature of this case, the general opinion being that the tumour was periodontal and not antral.

Dr. IRWIN MOORE showed: (1) A Pair of Forceps for Removing Foreign Bodies from the Œsophagus; and (2) a Pair of Cutting Pliers for cutting through a Tooth-plate Impacted in the Œsophagus.

Mr. W. STUART LOW showed cases of (1) Lupus of the Nose improved by Tuberculin; (2) a Large Cyst on the Soft Palate of a boy, which had existed for years but had never given any inconvenience; and (3) a Lingual Thyroid in a woman which had been operated upon by splitting the tongue down the middle.

Dr. DAN MCKENZIE showed: 1. A case of (?) Lupus of the Nasal Septum in a female aged 41. The disease was limited to the anterior area of the septum on both sides, the mucous membrane of which was turgid and swollen.—The diagnosis favoured by the members who spoke was that the disease was simple hypertrophy due to long-standing catarrh. 2. A case of Tertiary Specific Ulceration of the Pharynx undergoing Malignant Transformation.

Dr. W. H. KELSON narrated the subsequent history of a case of Swelling in the Right Tonsillar Region in a woman aged 24. Operation had been performed and the tumour removed. It consisted of glandular masses apparently sarcomatous in their nature.

Dr. A. BROWN KELLY (Glasgow) exhibited a series of specimens illustrating Œsophageal Diseases. They were as follows: (1) Specimen presenting traction diverticulum of the œsophagus and atrophy of the left vocal cord due to an infiltrated gland beneath the arch of the aorta; (2) Œsophagus with perforations due to ulceration produced by foreign bodies; (3) Œsophagus with cicatricial stenosis caused by carbolic acid; and (4) Cancer of the œsophagus projecting into the trachea.

Mr. EDWARD D. D. DAVIS showed a case of Laryngeal Crises with Abductor Paralysis (Tabetic). The cords lay in the position of complete adduction.—Sir FELIX SEMON remarked that abductor paralysis in tabes not infrequently preceded all other symptoms in point of time.

Mr. NORMAN PATTERSON showed a man who had been extensively operated on for the removal of Epithelioma of the Pharynx, together with secondary glands in the neck.

Dr. H. J. DAVIS exhibited: (1) A woman, aged 24, with a large Cyst in the Right Tonsil; and (2) a Foreign Body (a nail 2 inches long) in the Left Bronchus of a child, aged 2½, with complete transposition of the Viscera. The X ray plate and viscera were also exhibited.—Discussing the last case, emphatic opinions were expressed as to the importance of examining by means of the X rays and the bronchoscope all cases of unilateral non-tuberculous pulmonary disease, both in children and in adults; and many cases were narrated in which delay or omission in doing so had led to grave consequences.

Dr. P. WATSON-WILLIAMS gave a demonstration of his Osteoplastic Radical Frontal Sinus Operation on the dead body, and showed a new Electric-light Gag for use in operating on the faucial regions, &c.

Mr. HUNTER TOD showed: (1) A case of Enophthalmos consequent upon ethmoidal disease; and (2) a case of Bleeding Tumour of the Septum.

A patient with Stenosis of the Larynx of doubtful nature was presented by Dr. L. H. PEGLER.

Mr. W. D. HARMER showed the Larynx from a case of suicide by total laryngectomy. He also exhibited a Heart showing Endocardial Vegetations from a case of Pneumococcal Laryngitis.

LIVERPOOL MEDICAL INSTITUTION.

Perforation in Duodenal Ulcer.

A MEETING of this society was held on March 28th, Mr. ROBERT JONES, the President, being in the chair.

Mr. ARTHUR J. EVANS read a paper on Perforation in Duodenal Ulcer. He described seven cases operated on by him in a period of 12 months. The patients were all males, their ages being from 23 to 42 years. Of these cases five recovered; in six the perforation was on the anterior wall of the duodenum. Mr. Evans drew attention to the striking difference in the results obtained now and those of 1894, when only six successful cases had been reported. Early recognition of the condition was the essential factor in success. Perforation occurred early in the disease, and the ulcer might exist without any apparent symptoms. The most common indication of perforation was sudden acute pain, at first localised to the epigastrium; later the pain became diffused over the abdomen. The board-like rigidity of the recti, especially of their upper portions, was one of the most valuable signs. The degree of shock and collapse was very variable and might be deceptively slight. The temperature and pulse-rate were not of much diagnostic value. Subacute perforation invariably took place in a chronic ulcer; the extravasated fluids were usually confined to the region of the perforation. In most cases the abdomen was dry-swabbed, but when contaminated by undigested and decomposing food lavage was employed. The Fowler position, continuous saline injection in the rectum, with pelvic and epigastric drainage, were the

most important points in the after-treatment. Mr. Evans thought there were objections to the addition of gastro-enterostomy; the perforative peritonitis might interfere with the anastomotic junction between stomach and bowel; the lesser peritoneal sac might become infected, adding shock to the already collapsed condition; pneumonia was more likely to occur. The invagination alone seemed to cure the ulcer and restore the patient to good health in most cases.

In the discussion that followed Mr. R. E. KELLY said the shock and pain of the onset moderated in six hours or so, becoming more profound later; the most important sign was the alteration in the respiration, especially the reversal of the abdominal movements. It was important to notice where the pain was felt at the onset; if about the umbilicus there was generally appendicitis. He had found most difficulty in the young and the old patients in distinguishing between perforation and appendix trouble.

Mr. R. W. MURRAY had prevented ulceration in cases of burns by the administration of bicarbonate of soda in large doses. In treating these cases he wiped out the peritoneum, and had not ever done a gastro-enterostomy either at the primary operation or later.

Mr. F. T. PAUL thought that if it could be safely added a gastro-enterostomy was a safeguard against the recurrence of perforation; he thought the presence of food in the peritoneal cavity made a great difference in the shock. He washed out and used a silver drain in the pouch of Douglas; the tube had a gauze wick in it. The injection of saline was a most important point, and in those cases where there was a doubt of the rectal injections being properly carried out it was better to use subcutaneous injections.

Mr. F. A. G. JEANS attached very great importance to reversed abdominal movements as a delicate sign. He neither washed nor wiped out the peritoneum and attributed the good results to saline injections and to suprapubic drainage. He had never had occasion to do a gastro-enterostomy at the time of the perforation, and in those cases in which he had suspected this might be required later there had been no further symptoms so far as he could trace the cases.

Dr. F. W. COLLINSON (Preston) spoke of the difficulties in diagnosis that chest cases might cause, such as abscess in the mediastinum. He strongly urged that these cases when requiring removal to hospital should not be transported lying on an ambulance, but in the sitting posture. He had made experiments in the post-mortem room to find the effect of washing the peritoneal cavity, and had found that even a hose-pipe was not effective. He removed the appendix in all cases where he opened the abdomen.

Dr. G. C. E. SIMPSON, in speaking of the difficulty of distinguishing between abdominal and chest conditions, said that where the pulse and temperature continued to rise the trouble was in the chest, but where the alterations in the respiratory movements were accompanied by a low pulse-rate and moderate rise in temperature the trouble was abdominal.

In replying, Mr. EVANS said he had seen a case in which acute pancreatitis had given symptoms similar to a duodenal perforation.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Exhibition of Specimen.—Prolapse and Pregnancy—Cause and Cure of Procidentia in the Parous Woman.

A MEETING of this section was held on March 15th, Mr. A. J. HORNE, the President, being in the chair.

Dr. E. H. TWEEDY exhibited a specimen of Suppurating Undeveloped Horn of Bicornute Uterus. The patient complained of pain in the abdomen. The abdomen had been opened in London, and an abscess of the tube drained. The wound suppurated, and sinuses exuding fæces afterwards formed in the left iliac region and in the vagina. On opening the abdomen he found a tumour communicating with the outer skin by one sinus and with the vagina by another. On the opposite side the uterus, with its attached tube, was seen. On removing the tumour and examining it he found it to be a uterus. The intestines communicated with it, and fæces passed through. It was a fine example of the one horn of a bicornute uterus.—Dr. BETHEL A. H. SOLOMONS recalled a case operated on some years ago at the Rotunda Hospital in which were found a uterus, a uterus and vagina in a state of hæmatocolpos, and an ovarian tumour.

Dr. SOLOMONS read a paper on Prolapse and Pregnancy, with a note on Vaginal Suspension of the Uterus, in which he commented on the difficulties in treating pregnancy complicated by prolapse. The second part of the paper dealt with the operation of vaginal suspension. Dr. Solomons wrote to 60 patients on whom the operation had been performed. The 26 replies received proved that the operation was an excellent one, and tended to no untoward symptoms in pregnancy, labour, or the puerperium.

Dr. TWEEDY read a paper on the Cause and Cure of Procidentia as it occurred in the Parous Woman. He had practised the operation described by him in 1906 and founded on the principles of Alexandroff's operation—i.e., fixing Mackenrodt's ligaments in front of the cervix—many times since, and was more than ever convinced of its efficacy. The extra-peritoneal shortening of the so-called sacro-uterine ligaments he considered a mere modification of Alexandroff's operation, for the fascia which lay immediately beneath these ligaments interlaced with Mackenrodt's ligaments at the cervical insertion, and both formed parts of the diaphragm which stretched across the pelvic inlet.—Dr. H. JELLETT said that the alleged relation of his (Dr. Jellett's) operation to Alexandroff's resolved itself into a question of whether it was possible to confuse the two ligaments. He could not see any possibility of confusing the two. Mackenrodt's ligaments ran horizontally along the base of the broad ligament; the sacro-uterine ran vertically. One was broad and flat, the other string-like. In regard to whether Alexandroff's operation or his was the more efficient, he personally considered that the sacro-uterine operation was so on theoretical grounds. It was easier to support any object by a vertical support than by horizontal supports, because the latter, to give the same help, must be stronger and tighter. He considered Wertheim's interposition operation the best prolapse operation in women past the child-bearing period, provided that when necessary the utero-sacral ligaments were also shortened. He would like to have authority for the statement that division of the utero-sacral ligaments did not affect the position of the uterus.—Sir WILLIAM SMYLY said he agreed with what Dr. Solomons had said about the danger of complete prolapse in connexion with pregnancy; in one case he remembered when the patient had been in labour five or six hours the uterus ruptured. He was not so sure that during pregnancy was a good time to undertake operation, as the stretching of the parts might afterwards nullify the effects. He would prefer to wait until after the puerperium. As to the supports of the uterus, he agreed with Dr. Tweedy that Mackenrodt's ligaments were the chief support, but he considered that Dr. Tweedy made too little of the other things that helped to support the uterus. He had seen Dr. Tweedy perform Alexandroff's operation, and that day he had performed Dr. Jellett's operation himself. Both of them he considered very good, but distinct, operations. Of all the operations for prolapse which he had performed he found inter-position to be the best, because it cured the cystocele.—Professor A. J. SMITH suggested, regarding Dr. Solomons's paper, that as fixations were being done every day, it would be wise to endeavour to ascertain by examination during pregnancy whether a case was going to go wrong. As to Dr. Jellett's and Dr. Tweedy's operations, he was more in favour of Dr. Jellett's. There could be no doubt about palpable bands of fibres being felt, and he agreed in believing that when they were shortened they had a distinct influence in drawing the cervix backwards and tilting the fundus forward. The operation which Professor Smith usually did was the drawing of the round ligaments through the recti muscles and fixing them there.—Dr. GIBBON FITZGIBBON said that he had been doing Dr. Tweedy's operation. He did not think that the levator ani was to be so completely ignored as Dr. Tweedy led them to believe. He could not agree with Dr. Tweedy in attaching a point half an inch below the Fallopian tubes down to as near as possible the urethral orifice; this he considered far too extreme. In any cases that he had done he only fixed about one-third of an inch above the peritoneal reflection of the uterus. One patient treated in this way went through a twin pregnancy afterwards quite normally.—Mr. J. S. ASHE said that from

an anatomical point of view Dr. Tweedy was correct in saying that Mackenrodt's was the ligament for the support of the uterus.—The PRESIDENT, speaking of the two papers, said that the cases described by Dr. Solomons might be met with every other day, but he thought it was very seldom that a displaced pregnant uterus was met with that could not be rectified and supported by a pessary. He would prefer not to operate for the prolapse until pregnancy was over. Cases of procidentia often occurred suddenly in young girls from lifting weights or some such cause, and in these instances the procidentia was evidently caused by pressure from above.—Dr. SOLOMONS and Dr. TWEEDY replied.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 19th, Dr. S. Lodge, the President, being in the chair.—Dr. F. W. Eurich read a paper introducing a discussion on Headache. He wished to include pains referred to the head as well as headache proper. Many patients described a sense of pressure as a headache; they were generally neurasthenics. A large proportion of headaches were located in regions supplied by the fifth cranial nerve, a few to areas supplied by certain of the upper cervical nerves. These were mainly either peripheral in origin or due to lesions of the nerve trunks. Where the pain appeared to be deep-seated tension of the dura mater, along with some circulatory disturbance of the blood or lymph, must be assumed. Headache following amyl nitrite, anæmia, and the pains in a limb consequent upon embolism or thrombosis might be explained on this hypothesis. Since most headache was peripheral in origin, careful examination of the parts in which the fifth nerve terminated might give the clue to the treatment. Spots of local tenderness were due rarely to brain tumour, occasionally to syphilitic periostitis, but fairly commonly to integumental, periosteal, or aponeurotic indurations which were not syphilitic, but which, as far as the last were concerned at any rate, were often classed as rheumatic. These latter indurations were generally either frontal or occipital; they caused intense headache, and the only effectual treatment for them was massage. Dr. Eurich uttered a warning against the tendency to label headaches hysterical. Hysteria was a very rare cause, and such a diagnosis generally meant an insufficient examination. There was also a class of headache due to hard mental work, over-exertion, insufficient or irregular sleep or food. Many of the headaches of childhood traceable partly to eyestrain were ultimately due to lack of sleep. There were children who were lively in the evening, but howled in the morning; while others tired early and woke with the lark. This difference was due, not to habit, but to constitution, and was associated with differences in the type of sleep. The former class if roused early missed the most important part of their sleep, and headache was not the only ill result of the loss. Cold morning baths also were bad for them. Many anæmic, not merely chlorotic, patients suffered also from lack of rest, and a rest cure was an important preliminary to treatment, followed by a course of iron and arsenic, best given in the form of arseniated mineral waters such as levico plentifully diluted. In addition to anæmia, headache might be produced by vaso-motor paralysis, as in the case of amyl nitrite. In severity this form came second only to the pains of brain tumour or of cerebral syphilis. Another type appeared to be due to hyperæsthesia of the dura, a form which might follow influenza. Finally, there was the important class of headache due to organic disease within the skull, to renal disease, and to various poisons such as lead and aniline. The cause of these could be detected in many cases only by careful and repeated examinations and observations, for in children nephritis might show itself not by the presence of albumin but by casts, and long-continued observation of the pulse and temperature might be necessary before the diagnosis of tumour could be established. After referring to megrim Dr. Eurich urged the importance of careful and systematic examination in every case of headache, and of paying due regard to the probabilities of the various causative factors in headache.—Dr. A. Bronner referred to the value of iodides in brain tumour and to the occasional relief to headache observed after wearing manifestly incorrect glasses.—Dr. A. C. F. Rabagliati referred to the headaches accompanying bilious attacks, and the effects of regulation of the diet.—Dr. J. Metcalfe had cured many cases by means of ionisation with salicylic acid, and believed in high frequency in headache associated with high arterial tension. He mentioned the use of calcium in the "lymphatic" headache.—Mr. G. H. Oliver described a case in which migraine had been cured by proper glasses.—Mr. F. W. Goyder advised concerted rather than independent action by the ophthalmic, medical, and gynæcological specialists in the diagnosis of headache.—Dr. W. Wrangham discussed the ophthalmic aspects of the condition, and Mr. J. B. Lockerbie mentioned seasonal, epidemic, and climatic headaches.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on March 28th, Dr. W. H. Willcox, Vice-President, being in the chair.—The Harveian lecture was delivered by Dr. T. Claye Shaw, the subject being, "The Material Obligations of Spiritualism and Allied Phenomena." Dr. Claye Shaw began by referring to the universality of belief in the existence of spiritual Power, Force, or some mysterious agency of a controlling nature, and to the essentially material way in which this was regarded and exploited. A remarkable analogy was pointed out between the science of bacteriology and the fundamental basis of the Christian religion, whilst the attitude of exponents of theology is much more tolerant towards scientific teaching than formerly. The spectre or ghost theory was then analysed minutely, and the necessity of its physical obligations pointed out, the result pointing to the conclusion that the common acceptation is impossible and that spirit séances and rappings and messages from the dead are impostures and cannot be. The telepathic hypothesis was then discussed, and the impossibility of its acceptance pointed out. The discussion of the relation of spiritual force to dead matter was then entered upon with the object of showing that these forces have relations only with living matter, and that the upholders of the "occult" are illogical in that they profess to be able to control a higher spiritual essence by a lower and baser material structure, the theory being untenable that a lower form of matter can control that which made it and is ruled by it. It was shown that the spiritists' ideas are in all respects material and that they have never led to anything beyond the merest trivialities. Definitions of "spiritual doubles," even by occultists themselves, were given, and the difficulties and errors in their interpretation pointed out, and a critical analysis was made of the dualistic theory which involves the existence of a "mind process" acting only through the material. The recent views of Professor J. S. Macdonald, given at the British Association in 1911, were discussed and the difficulties of acceptance pointed out. The lecturer then gave his own theory of the eccentric projection of ideas as being in the main responsible for the common notions of the externality of force, and he advocated the study of epistemology as being necessary to our correct estimation of the validity of the external world. Occasion was taken to discuss the subjects of hypnotism and suggestion with the view of showing that they are not connected with any especial force, but that they can be practised by anyone and can even be taught in school clinics.

THE German Central Committee for Cancer Research has issued a leaflet for public distribution, calling attention to the early symptoms and signs of malignant disease, and urging immediate recourse to a medical man. The author of the leaflet is Dr. Alfred Pinkuss, a Berlin gynæcologist.

UNIVERSITY COLLEGE HOSPITAL.—The annual meeting was held on March 28th. Captain the Hon. E. S. Dawson congratulated the meeting on the satisfactory state of every department of the hospital. During the last two years there had been an increase of 851 in-patients, or 20 per cent. Under the able guidance of the medical and surgical staffs the hospital was up to date in every respect, while the financial and general condition of the medical school, with its increased number of students, was very satisfactory. The effect of the Insurance Act on the working of the hospital would be carefully watched by the committee, and any action that might be necessary would be taken in concert with the other great hospitals of London. Sir Ernest Hatch (treasurer) announced that he was arranging for a large ball to be held at the Albert Hall in aid of the funds of the hospital. The report and accounts were adopted, and the Duke of Bedford was elected president for the coming year.

Reviews and Notices of Books.

The Practice of Medicine. By FREDERICK TAYLOR, M.D. Lond., F.R.C.P. Lond., Consulting Physician to Guy's Hospital and to the Evelina Hospital for Sick Children; Physician to the Seamen's Hospital, Greenwich, &c. Ninth edition. London: J. and A. Churchill. 1911. Pp. 1121. Price 18*s.* net.

Dr. Frederick Taylor's book, which has now reached its ninth edition, has been subjected to a thorough revision since the publication of the last edition in 1908. Alterations and additions have been made in the accounts given of cholera, dysentery, aphasia, hysteria, obstruction of the bronchi, the physical examination of the heart and vessels, colitis and appendicitis, ankylostoma, gall-stones, anæmia, leukæmia, diabetes, and functional albuminuria. The description of pulmonary tuberculosis, for which Dr. Taylor still uses the familiar term phthisis, has also been revised, and the methods of treatment by graduated labour and by the administration of tuberculin are described briefly. The following subjects are new in this edition: pellagra, meralgia paræsthetica, pneumococcal meningitis, myotonia atrophica, amyotonia congenita, enterospasm, Hirschsprung's disease, intermittent claudication, congenital family cholæmia, peritoneal adhesions, lymphatism, bacilluria, and pneumaturia. We have looked closely at all these descriptions and they afford clear, accurate, and succinct accounts of the conditions in question. The illustrations in the present edition have been increased to 67 in number, and they include some drawings to illustrate nervous diseases and some tracings and electrocardiograms. Dr. Taylor's book gives a clear and careful survey of the practice of medicine and is a good text-book for the student, since each condition is systematically considered in a thoroughly practical manner. A useful description of skin diseases is included together with their treatment.

In spite of its wide range the book is still of convenient size. It is of interest to note that a third edition of the Italian translation is in course of publication. We are glad to find that there is still room for a text-book on medicine written by one author rather than by a series of writers, since the personal note of experience gives a continuity which is certainly desirable in a text-book as opposed to a larger work of reference. The book deserves the success that it has achieved and will maintain.

Acromegaly: a Personal Experience. By LEONARD PORTAL MARK, M.D. Durh., late President of the West London Medico-Chirurgical Society. With 11 plates. London: Baillière, Tindall, and Cox. 1912. Pp. 160. Price 7*s.* 6*d.* net.

MANY scientific treatises have been written about acromegaly, and many learned monographs will yet appear before we reach a final knowledge of this strange disease, but it is unlikely that ever again anyone will write so interesting, so intimate, and so sympathetic an account of acromegaly as that which has been published by Dr. Leonard Mark. It will be well to allow the cultured author to give his own account of how he became aware that he was the subject of acromegaly. "I was walking across the north-east corner of Cavendish-square one afternoon in November, 1905, when all at once the idea seized hold of my mind that perhaps I might be suffering from acromegaly, and that it might be the cause of my head troubles. It came upon me like a bolt from the blue. ..... When I got home I at once looked up the subject in Bowlby's 'Pathology,' and what was a suspicion was at once confirmed. The next day I went to see Dr. Archibald Garrod, and asked him about it. He told me at once that he had known it as a fact for many years, and was surprised I had only just discovered it for myself. He first became aware of it one day when we came out of St. Bartholomew's Hospital together, and entered the Aerated Bread Company's shop close to the gates. While sitting there having tea I told him of the denture that I had begun to wear in my mouth to make my teeth meet. He already knew about my eye trouble, &c., and he then and there diagnosed what was really the matter with me. This must have been in 1892, thirteen years before. He told me he had always considered it wiser to say nothing about it to me, but still he wondered at my not finding it out sooner." Dr. Garrod was not the only one who had made this diagnosis. At first Dr. Mark had a feeling of resentment at having been kept in the dark for so many years by his medical friends and colleagues—a feeling which soon changed to gratitude, for he became more and more convinced that he got his knowledge soon enough. We again feel tempted to allow the author to speak for himself:—"For some fifteen or twenty years, each day when I looked into the glass to brush my hair or to shave, there was a typical acromegalic literally staring me in the face. Yet I never recognised the fact. One might say it was a case of a '*Secret de Polichinelle.*' The strange thing was that, in my case, the only one not in the secret was poor Polichinelle himself, with his heavy jowl, his pot belly, his big hands and feet. ..... Punch is well recognised as presenting the acromegalic traits. Is not the way in which he belabours the sconce of poor Judy a symptom of his trouble? Whenever I come across the show in the street I feel impelled to stop and become a spectator. Only the other day, while pondering over the changes taking place in my own lower extremities and the lifeless condition which they are gradually assuming, I was struck by their similarity to those of the marionette which we see dangling in the show."

We have paid Dr. Mark the compliment of abstracting his word pictures, because we cannot hope to do them justice with our own pen. He has not only rendered a service to the small band of men who are making a special study of acromegaly by publishing a fuller and more complete medical history of the disease than any yet to be found in literature, but has also conferred on all medical men a benefit, not only in holding up to them the importance of studying disease from the patient's point of view, but of showing how a brave man can face the gravest of physical sufferings in a hopeful and courageous spirit, never complaining and ever retaining that sense of personal detachment which allows a play of humour over situations of the most extreme bodily discomfort. Those who take up this book will find it difficult to lay it down again until it has been read from cover to cover. The reader will surely experience a feeling of thankfulness that Dr. Mark has had the courage and sufficient health and strength to write it. This is the work of a truly good man, and we are glad to testify our admiration of its author.

The Essentials of Medicine: A Text-book of Medicine for Students beginning a Medical Course, for Nurses, and for All Others Interested in the Care of the Sick. By CHARLES PHILLIPS EMERSON, M.D., late Resident Physician, the Johns Hopkins Hospital, and Associate in Medicine, the Johns Hopkins University. Illustrated by the author. Second edition, revised. London and Philadelphia: J. B. Lippincott Company. 1911. Pp. 401. Price 8*s.* 6*d.* net.

THIS book is primarily intended for medical students and nurses, but the author also had in view the possibility that his work might be of interest and use to the general reader. We must confess to having but little sympathy for works on medicine written for the lay public, since as a rule they are either inaccurate, owing to the attempt to simplify the

subject matter, or else too technical to be of value. Dr. Emerson appears to have steered between these two courses with considerable success. He treats his subject in simple style, but is yet generally accurate and always intelligible. In his preface he alleges that owing to the nature of their curriculum, many American medical students lack perspective in their medical studies, in that they have not learned to separate the important from the unimportant. He further believes that nurses often know a great deal in a general, indefinite, inaccurate way. His object has been, therefore, to try to afford a clear, though limited, idea of medical subjects. With this object in view he gives brief anatomical and physiological introductions before describing the diseases of a given organ or system. There is nothing special in the classification of the diseases described (which is that adopted in most text-books of medicine), or in the manner of describing them, but the accounts given, though brief, are clear, concise, and instructive. The symptoms are described in such a way as to indicate their relative importance, and, where possible, their nature and the manner of their production are indicated. The illustrations are for the most part simple diagrams. Questions of treatment are discussed in general terms, and stress is laid upon the diet, general management, and the principles of treatment rather than upon details in regard to the use of medicinal agents, though the mode of action of drugs is sometimes briefly outlined.

We are inclined to agree with Dr. Emerson in his contention that many students and nurses fail at first to acquire a grasp of the relative importance of the manifestations and symptoms of the diseases with which they are brought into contact, more especially when preparing for examination. The book before us might well serve as an introduction to the study of disease and assist in the transition from the observation of the physiological to that of the pathological. It should also be useful to nurses wishing to acquire some general information about medical conditions, to enable them to carry out their work intelligently and with interest. The last chapter, which deals with signs and symptoms, is more particularly addressed to nurses. It contains also a discussion of the manifestations of hysteria and neurasthenia. The author claims in his preface that his book will also aid the general reader to understand more clearly the medical problems of the day, to appreciate more highly a well-trained practitioner, and to coöperate better with his medical adviser. Here he is perhaps more sanguine than we are, but it should certainly be interesting and intelligible to a general reader.

Problems of Boy Life. Edited by J. H. WHITEHOUSE, M.P. With an Introduction by the Right Rev. JOHN PERCIVAL, Bishop of Hereford. London: P. S. King and Son. 1912. Pp. 342. Price 10*s.* 6*d.* net.

THIS work is a collection of essays by various authors, all of whom have made a special study of the topics of which they treat. Mr. Whitehouse has contributed three essays and a portion of a fourth. The three for which he is entirely responsible deal with the Reform of Elementary Education, Street Trading by Children, and the Supervision of Juvenile Employment. The fourth essay, in which he has collaborated with Mr. Spencer J. Gibb, is called "Boy Labour: Towards Reform." The problems of boy life and the evils of boy labour are known to all, and there are few classes in the land who are better acquainted with the wastage and the ill effects, both immediate and remote, of child labour than the medical profession.

It is an axiom of medicine that when the cause of a disease is known a very long step has been taken towards the cure, and the causes of the present troubles and difficulties connected with boy life seem to be two—lack of control and the methods of modern industrialism. These two interact the one on the other, so that the virus due to them both is intensified. For, shortly, it may be said that after attaining the age of 14, when a boy leaves school, he is subjected to practically no discipline whatever outside his home, and even the parental control hitherto exercised in far too slight a degree ceases altogether; the boy has become a wage-earner, and as such demands and obtains far more liberty than is good for him. On the other hand, modern industrialism demands and obtains boy labour of such a kind that the boy is taught nothing which may be of use to him in the future. Take such occupations as those mentioned by Mr. Cyril Jackson in his report to the Poor-law Commission—milk-boys, van-boys, oven-boys, drawers-off in saw-mills, labellers in mineral-water factories, and many others—not one of these callings gives any training to enable the worker to find a fresh situation when he leaves his old one, they are eminently "blind-alley" pursuits.

As to remedies, it would seem that the recommendation of the Minority Report of the Poor-law Commission, 1909, may go far to cure the evil if it can possibly be put into operation. The gist of the recommendation is as follows: "We must shorten the legally permissible hours of employment for boys, and we must require them to spend the hours so set free in physical and technological training." The Minority accordingly recommend: (1) the statutory prohibition of the employment of any boy in any occupation below the age of 15; (2) the limitation of the employment of any youth under 18 to 30 hours a week; (3) the compulsory attendance of boys between 15 and 18 at a suitable public institute that gives physical training and technical education for not less than 30 hours a week. Less drastic recommendations will be found in the report of the Consultative Committee on Attendance, compulsory or otherwise, at Continuation Schools, 1909 (Cd 4757), quoted in the book before us at p. 312. The problem is both urgent and complex, and such a problem cannot be solved in a hurry. It is easy to "grub and stub" a coppice containing nothing but young growth; it is a very different matter when the coppice is full of old gnarled stumps. The evils inherent in the factory system are of 60 or more years' growth, but it is a wholesome sign that the public conscience is becoming awake to their existence and to the problems that such existence entails. A study of the essays before us should convince the thoughtful reader both of the complexity of the problem and also of the existence of a way of solution, even if that solution be one which can only be brought into action by national self-denial.

One word more. Economics, statistics, and extracts from Blue-books are to the average reader somewhat repellent, and these matters form a large part of the book with which his review deals. If any reader should find it difficult, let him put it aside until he has read "Across the Bridges," by Alexander Paterson, reviewed in THE LANCET of July 8th, 1911. After absorbing Mr. Paterson's easily digested matter he will be in better condition to wrestle with the somewhat tough pabulum offered by Mr. Whitehouse.

Handbuch der Allgemeinen und Speziellen Arzneiverordnungslehre. Von Dr. C. A. EWALD und Dr. A. HEFFTER. Fourteenth edition. Berlin: August Hirschwald. 1911. Pp. 851.

THIS guide to prescribing has had the confidence of several generations of medical practitioners in the German-speaking countries. The present edition is based upon the latest German Pharmacopœia and the most recent issues of the more important official formularies of other countries. It is divided into two portions. The first part contains sections devoted to descriptions of the various types of pharmaceutical

preparations with illustrative prescriptions; to the writing of prescriptions, posology, weights and measures; and to some of the legal and business aspects of this department of medical practice. A glance at the section on maximum doses reminds us of the great discrepancies which exist between the doses of the same substance as indicated by the various pharmacopœias. In illustration of this the doses of veratrine, strychnine nitrate, and tartar emetic, as given in the German, Austrian, and Russian pharmacopœias respectively, may be cited.

—	Strychnine nitrate.	Veratrine.	Tartar emetic.
German ...	0·005 to 0·01 grm.	0·002 to 0·005 grm.	0·1 to 0·3 grm.
Austrian ...	0·01 ,, 0·02 ,,	0·005 ,, 0·02 ,,	0·2 ,, 0·5 ,,
Russian ...	0·003 ,, 0·01 ,,	0·005 ,, 0·015 ,,	0·2 ,, 0·6 ,,

The second, or special, part of the work contains monographs on the more important official and unofficial drugs and their preparations, arranged in alphabetical order. The chief synonyms for the substance are given in each case, together with references to its occurrence in the various pharmacopœias and other formularies; its appearance and more prominent physical properties are outlined, and a short account is given of its therapeutic uses and, in the case of the largely used drugs, the most convenient forms for administration. These items are supplemented in many instances by the addition of prescriptions illustrating the use of the substance in question. Incompatibilities are indicated in some cases, but there are notable omissions in this connexion; no mention is made, for example, of the incompatibility of strychnine salts with the alkali iodides. Maximum daily as well as maximum single doses are given.

The authors assume a moderately conservative attitude towards the flood of new synthetic remedies, the effect of this industry being too often, in their opinion, either bewilderment or a deadening of the capacity for critical discrimination, in beginner and experienced practitioner alike. Yet a glance suffices to show that substances which have in any way shown their efficiency have by no means been neglected. Dr. E. Friedberger has contributed to the work a section on serum-therapy, which is probably more replete with useful information than any to be found in a book of this type.

There are a few errors in the chemical portions of the work to which attention should be drawn. Elaterin, which Power and Moore have shown to be a mixture of a substance active physiologically with one which is inert, is assigned a formula and described as though it were a distinct and homogeneous chemical substance. Picrotoxin is similarly treated as an individual compound, although Meyer and Bruger have demonstrated the fact that it is a mixture of two substances. "Tartared iron" is mentioned as the English name for ferrum tartaricum, and the formula $(C_4H_4O_6)_2Fe$ is given; this is incorrect, as potassium must be present from the method of preparation. Moreover, the properties of these scale preparations of iron make it plain that they are not salts of the ordinary type, but probably compounds in which iron forms part of the acid radicle.

The comparison and coördination of the various pharmacopœias have been carefully and successfully carried out, and this feature will be particularly useful to English readers. The book as a whole may be recommended to the prescriber as a well-arranged and valuable work of reference.

LIBRARY TABLE.

Schutzpockenimpfung und Impfgesetz Unter Benutzung amtlicher Quellen. Bearbeitet von Professor Dr. MARTIN KIRCHNER. Berlin: Richard Schoetz. 1911. Pp. 158. Price M.1.—The importance of vaccination and revaccination is so well recognised officially in the German Empire that we are accustomed to envy the thoroughness with which these measures are carried out there. It comes, therefore, almost as a disagreeable surprise to find that the anti-vaccinationist exists in that country, where he is endowed with the same prejudices as his British prototype. Professor Kirchner, in the valuable little book before us, reviews the whole subject of vaccination in a masterly way. He has been able to draw upon the official records of the German Health Office, and has also reviewed the statistics of other countries. He writes in simple style, but takes nothing for granted. He discusses the arguments put forward by anti-vaccinationists, and demonstrates their fallacies and inaccuracies. The nature and effects of small-pox are clearly described, and the methods of spread are indicated. The history of various epidemics, of the old practice of inoculation, and of the introduction of vaccination is briefly outlined. The German vaccination law of April 8th, 1874, is then considered. This enacts that every child must be vaccinated before the end of the year following the year of birth, unless it is proved upon medical evidence that the child has suffered from small-pox, and further that every pupil of a public or private school shall be vaccinated during the twelfth year of life unless he or she has had small-pox or been successfully revaccinated during the five years previously. It is this law which the anti-vaccinationists in Germany wish to get repealed or modified. Professor Kirchner claims that the decision as to the protective value of vaccination is a matter for scientific medical practitioners to decide, while the judgment as to the necessity and practicability of compulsion are questions for jurists to advise upon, and that the decision upon the expert advice of the medical and legal professions is the only consideration for the public. It is of interest to note that Dr. Kirchner refers to England and Wales as the home of Jenner, but in spite of that as the El Dorado of the anti-vaccinationist. The Berlin Medical Society, at a meeting held on March 15th, 1911, passed unanimously a resolution affirming the absolute necessity of retaining the vaccination law of 1874 intact, and emphasised the danger of a modification like the English "conscience clause." Professor Kirchner's conclusions are summarised in a paragraph at the end of his book, which constitutes an eloquent appeal to his countrymen to retain "the magnificent gift of Jenner" and remain the best vaccinated country in the world. We can commend this small book as interesting, instructive, and valuable.

National Happiness under Individualism. By BINNIE DUNLOP, M.B., Ch.B Glasg. Price 3*d.*—This original and painstaking essay being hardly medical in its bearing, its two leading ideas can only be just noted here. National happiness depends fundamentally on the avoidance of *Over-population* (poverty, unemployment, socialistic discontent, degeneration, &c.), requiring either State emigration of all necessitous children or encouragement of a much lower birth-rate among wage-earners; *Dangerous Under population* (caused by excessive expenditure on luxuries), requiring more or less taxation of luxuries on their capital value for the army and navy.

JOURNALS AND MAGAZINES.

Parasitology. Edited by G. H. F. NUTTALL, F.R.S., and A. E. SHIPLEY, F.R.S.; assisted by EDWARD HINDLE, Ph.D. Vol. V., No. 1 Cambridge: University Press. Price 10*s.* net. Yearly subscription, £1 10*s.*—This journal is no longer published as a Supplement to the *Journal of Hygiene*, but is now distinct. In view of the increased cost of production it has been found necessary to increase the yearly subscription from £1 1*s.* to £1 10*s.* The present number contains

several papers of considerable interest from a general point of view, although none of them are directly concerned with human diseases. Mr. C. Warburton, in "Some Notes on the Genus Rhipicephalus," shows that the members of this group present an almost unparalleled example of "species in the making." As a result it is extremely difficult to separate them off into different species, for every possible gradation occurs from one form to another. Mr. E. A. Watson and Mr. S. Hadwen contribute short descriptions of several new species of trypanosomes found in Canadian mammals. Amongst others the parasite of dourine, Trypanosoma equiperdum, is described, together with some remarks on its biology. This parasite was first discovered in North America by Watson and Gallivan in 1907,[1] and still occurs in the North-West Provinces in spite of all attempts to eradicate the disease. The dourine of Canada is shown to be different pathologically, at any rate, from that occurring in Africa, but resembles the European form of the disease. The trypanosomes are rarely, if ever, found in the general circulation of infected animals, but only in the serous or sanguineous fluids of local swellings and infiltrations. Moreover, horses may die from the disease without the parasites ever having been detected, except by means of subinoculations into other horses. It may be added that these authors found virulent outbreaks of dourine occurring in places where the thermometer sometimes drops 50° to 60° F. below zero, a point worthy of notice by those who attempt to cure sleeping sickness by freezing their patients. An interesting article, by Mr. T. Southwell, on "The Pearl Inducing Worm"—a cestode—is followed by an important paper by Major S. R. Christophers, I.M.S., on the Development of Leucocytozoon canis in the Tick, with a Reference to the Development of Piroplasma. In addition to describing the complete life-cycles of these protozoa, the author shows how details in the life-history of particular species of ticks, or even different rates of development of the parasite, might bring about great differences in the transmission of the infection without any corresponding modification of the cycle of parasitic development. Professor G. H. F. Nuttall gives some further Notes on Ticks, and also a short paper on a new genus, *Rossiella*, belonging to the family piroplasmidæ, and occurring in the jackal of British East Africa. Of especial interest to all students of parasitology is the concluding article on Equine Piroplasmosis, by Professor Nuttall and Mr. C. Strickland. Ever since 1901, all piroplasmosis, or "biliary fever," occurring in horses has been considered as one disease caused by Piroplasma equi, Laveran. In the present paper it is shown, however, that hitherto two distinct diseases have been confused under this heading, and the parasites causing them belong to different genera. For the original form of the disease, caused by Nuttallia equi (Laveran), the term "nuttalliosis" is proposed, in order to distinguish it from the true "piroplasmosis" caused by Piroplasma caballi, Nuttall. The geographical distribution of the two diseases is different and, finally, they are distinguished by means of their immunity reactions.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLIII., No. 6. Feb. 27th, 1912. London: C. F. Clay, Cambridge University Press. Pp. 401–506, XXV.–XLIV., with title-page and index of papers and authors. Price 6*s.* 6*d.*—G. A. Buckmaster and J. A. Gardner deal with the Nitrogen Content of the Blood. The occurrence of free nitrogen in all the liquids of the body is a well-established fact, but whether this gas is excreted in the body as a normal though insignificant product of metabolism was for many years a matter of dispute. The authors find that the volume of nitrogen in the blood does not follow the ordinary physical laws of absorption with varying nitrogen-pressures in the alveolar air. After a period of oxygen inhalation there is an excess of nitrogen in venous compared with arterial blood, but there is no evidence to show that this excess is due to a production of nitrogen in the ordinary processes of metabolism. In the opinion of the authors, during the period of oxygen inhalation the excess in venous blood is due to a gradual leakage of nitrogen from fat and fat-like tissues. George Fahr was working at the factors which govern the combination of oxygen with hæmoglobin at the time of the sad death of Professor Bohr, to whom we are so largely indebted for the development of the physiology of respiration, and he dedicates his contribution on "New Determinations of Certain Absorption Coefficients in Blood-gas Investigations" to the memory of his benefactor, Professor Bohr. On the whole, his results are in very good agreement with the values found by Zuntz. The same author next describes "A New Absorption-meter." A. V. Hill returns to the question, "The Absence of Temperature Changes during the Transmission of a Nervous Impulse." The author describes the thermopile and other apparatus used by him. By his thermo-electric method it can be shown that tetanus up to 25 seconds of a live nerve does not cause a change of temperature (other than at the seat of excitation). For every single propagated disturbance the change of temperature cannot exceed about 10^{-8}° C., a hundred-millionth of a degree. This corresponds to an oxidative process in which only one molecule of oxygen is used in a space of visible size—viz., a $3 \cdot 7\mu$ cube, which suggests strongly that the propagated nervous impulse is not a wave of irreversible chemical breakdown, but a reversible change of a purely physical nature. Dr. Wilhelm Stepp writes on the Preparation of Secretin. The experiments were all carried out on dogs under morphia-chloroform narcosis. There is not sufficient evidence of the existence of more than one variety of pancreatic secretin. Secretin, which is a water-soluble substance, is occasionally present in minute quantity in the intestinal mucous membrane in a free condition, but in most cases no free secretin is present, while in all cases the greater part, if not all, is present in the form of a precursor, which is insoluble in water. From this precursor secretin can be obtained by extraction with dilute acids, 70 per cent. alcohol, or strong soap solutions, while glycerine or bile salts yield feebler extracts. Acetone, ether, or absolute alcohol does not extract secretin. Lastly, the author gives a method for the preparation of secretin of great potency and in a dry form. H. E. Roaf continues his contributions to the physiology of marine organisms, and deals with the Influence of the CO_2 and O Tensions on Rhythmical Movements. The experiments were made on rock barnacles and a small fish of the Cottus genus by counting the movements of the appendages and gills respectively, a stop-watch being used. By adding sodium bicarbonate to sea-water it is possible to alter the hydrogen ion concentration independently of the CO_2 tension. The rates of movements of fish and barnacles are influenced by the H ion concentration of the sea-water, but in opposite directions. The O tension does not appear to exert an influence on the rates of movement. W. M. Bayliss continues his researches on enzyme action, and deals with "the synthetic properties of anti-emulsin." This paper, which cannot be epitomised in a short space, is one that should attract the attention of both pathologists and physiologists. G. R. Mines, in a somewhat long paper illustrated by many tracings, deals with the Relations to Electrolytes of the Hearts in Elasmobranchs and Pectens." The problem is to compare the action of the same substances on similar tissues taken from different

[1] Vide THE LANCET, May 11th, 1907, p. 1315.

species of animals. The methods used for the hearts of the ray and dog-fish are described. A large number of substances were tried, but on the whole the hearts used showed many close resemblances to the heart of the frog in their relations to electrolytes. The action of magnesium on these hearts accords with the hypothesis that this substance acts by altering the electric charge of the surfaces which are affected by the hydrogen ion and by trivalent kations. The paper is more especially interesting to pharmacologists. The following are the Proceedings of the Physiological Society for Dec. 16th, 1911, and Jan. 20th, 1912:—W. Legge Symes: Apparatus for Perfusing the Frog's Ventricle. H. G Chapman: A New Commutating and Reversing Key. F. W. Edridge-Green: Simultaneous Colour Contrast. E. R. Lyth: Effects of the Movement of Air and of Water upon the Pulse-rate in Man. K. O. Neumann: The Oxygen Exchange of the Suprarenal Gland. T. R. Elliott: The Control by the Splanchnic Nerves of Adrenalin Secretion. F. W. Edridge Green: A New Test for Colour Blindness. W. M. Fieldman: A Method for Calculating the Number of Capillaries that are filled with Blood in the Human Body. H. E. Roaf: A Model to Illustrate Osmotic Contraction of Muscle. John Parkinson: The Effect of Inhalation of Oxygen on the Rate of the Pulse in Health. W. M. Bayliss: A Class Experiment to Illustrate the Synthetic Action of Enzymes. J. F. Twort and Leonard Hill: Further Experiments on the Effect of Breathing Oxygen on the Nitrogen Dissolved in the Urine. H. E. Roaf: The Relation of the Weights of the Heart, Liver, and Kidneys to the Body Weights in Cats.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

OLIVAL SOAP.

(COMPANA ANGLO-ESPANOLA DEL JABON, "OLIVAL," MALAGA. AGENCY: WILLIAM JONES, 17, EAST-STREET BUILDINGS, MANCHESTER-SQUARE, LONDON, W.)

THE statement that this soap is produced from olive oil is supported by our analysis. The specimen submitted to us in fact had all the properties of the time-honoured well-made Castile soap. We separated from the soap the fatty acids and they were found to give physical constants identical with those obtained when the fatty acids of olive oil are examined. We also directed our attention to the iodine-absorption value of the liberated fatty acids and the figure obtained was 88, which is the figure recorded by authorities as yielded by the fatty acids of genuine olive oil. A general analysis gave the following results: Fatty acids, 80·0 per cent.; combined alkali, Na_2O, 10·53 per cent.; and moisture, 9·47 per cent. There was only just a suspicion of uncombined alkali present according to the delicate phenol phthalein test. The soap contains a minimum of water, is economical in use, and does not yield a superfluous lather. It may fairly claim to be a pure unirritating soap.

DIGALEN TABLETS.

(THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LIMITED, 7 AND 8, IDOL LANE, LONDON, E.C.)

We have already examined a fluid preparation of digalen, which contains the active principle of digitalis folia. Clinical results have shown that digalen gives the full therapeutic effect of the leaves, and it is further stated that it avoids gastric troubles and produces no cumulative effect, whilst giving a prompt physiolcgical response. This standardised preparation may now be obtained in the form of tablets, each corresponding to 8 minims, or 0·5 c.c., of the original fluid digalen. The tablets dissolve readily in water and hence the convenience of this form of digitalis, the selection of the active principle and its standardisation being obvious advantages.

INVALID STOUT.

(W. J. ROGERS, JACOB-STREET, BRISTOL.)

The analysis of this malt liquor was as follows: Alcohol by volume, 6·94 per cent.; malt extractives, 8·42 per cent.; mineral matter, 0·49 per cent. (0·064 P_2O_5); dextrin, 3·52 per cent.; malt sugar, 4·00 per cent.; protein, 0·70 per cent.; and volatile acidity, reckoned as acetic acid, 0·21 per cent. The analysis shows that a good proportion of nourishing constituents is present in the stout. The malt extractives are high and the proportion of protein is similarly satisfactory. The results indicate the brewing of a high gravity wort, and on this account a claim is reasonably made for the stout in regard to possessing special nutritive value.

NEW AMPOULES AND GLOBULES.

(MESSRS. PARKE, DAVIS, AND CO., BEAK-STREET, REGENT-STREET, LONDON, W.)

Amongst the series of useful ampoules recently introduced by the above firm are those of pituitrin (5 c.c.) and of caffeine and sodium benzoate solution (20 minims). Pituitrin presents the active principles of the infundibular portion of the pituitary gland, and is used as a cardiac stimulant and as a means of raising blood pressure, while its diuretic and ecbolic effects are well known. It is said to act in these directions without adventitious toxic effect. The caffeine benzoate solution appears to offer advantages in cases where the physiological effects of caffeine are desirable, as in cardiac failure, dropsy, and so forth. Similarly, sterilised solutions of morphine sulphate and strychnine sulphate may be obtained in the convenient form of ampoule. Proposote globules are interesting, inasmuch as they contain a combination of creasote and phenylproprionic acid, which is insoluble in the acid fluid of the stomach. In the intestine its constituents are dissolved and creasote appears in the urine shortly after the globule is taken. This special method of administration avoids the irritating effects which may arise when creasol is employed in ordinary ways. Stearosan is similarly a combination of santalol with stearic acid, which again is insoluble in the acid gastric fluid, but which is readily decomposed by the alkaline secretions of the intestine. The administration of this compound, it is said, avoids the nausea and eructation to which, in some cases, sandal-wood oil gives rise. The globules are effectively made to protect and preserve the quantity and quality of the drug enclosed in them.

Professor Henry Briggs, who has been appointed a member of the Central Board under the Midwives Act for seven years from the expiration of the term of service of Sir William Sinclair, has had very great experience. He is professor of midwifery and gynæcology in the University of Liverpool, surgeon to the Liverpool Hospital for Women, and honorary medical officer to the Maternity Hospital, Liverpool.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. Frank Riley-Smith, of Bury St. Edmunds, the Leeds Infirmary and the York County Hospital will receive £2000 each. The Bury and West Suffolk Hospital will benefit by a sum of £500.—The late Mrs. Emily Howard has bequeathed £1000 each to the West London Hospital and the East London Hospital for Children. The Royal Hospital for Incurables at Putney will also largely benefit under the same will.—The late Mr. R. Bayly, of Brixton, Devon, has bequeathed £1000 to the South Devon and East Cornwall Hospital, and £500 to the Didworthy Sanatorium for Consumptives, near Plymouth.

THE LANCET.

LONDON: SATURDAY, APRIL 13, 1912.

The Inebriates Bill.

THE Inebriates Bill, which has been introduced in the House of Commons by Mr. ELLIS GRIFFITHS, the newly appointed Under Secretary to the Home Department, is described in its title as a Bill to consolidate and amend the law relating to inebriates. In its provisions it follows very closely the recommendations laid down in the report of the Departmental Committee appointed in 1908 to inquire into the whole subject of the working of the Inebriates Acts. It will be in the recollection of our readers that this committee proposed to extend very widely the legal power of control over persons of intemperate habits, and further to make the exercise of that power less difficult by simplifying the judicial machinery for committal to inebriate retreats and reformatories, and by forcing local authorities to give the necessary financial aid to such institutions. These proposals are embodied in the new Bill.

The first part of the Bill deals with inebriates who are not amenable to the ordinary criminal law, and makes many valuable proposals. It is here provided that any relative or friend of an inebriate may apply by petition to a judicial authority for a compulsory order of committal to a retreat, or for the appointment of a judicial guardian with power to control the inebriate's access to intoxicants and to prescribe his place of residence. The petition is to be accompanied by a medical certificate as to the condition of the alleged inebriate or by a certificate that the alleged inebriate has refused to submit himself to medical examination, and by a statutory declaration signed by the petitioner and by at least one other person to the effect that the alleged inebriate is an inebriate within the meaning of the Act. Upon the presentation of the petition the judicial authority must personally inquire into the case, and if satisfied that the facts are as represented in the statutory declaration may appoint a guardian or commit the inebriate to a retreat. Any judge of county courts, or police or stipendiary magistrate, or specially appointed justice who is a judicial authority for the purposes of the Lunacy Act, 1890, may exercise these powers. An inebriate committed to a retreat by order of a judicial authority has a right of appeal to the visitors of the retreat. Other clauses in this part of the Bill transfer the power of licensing retreats from the local authorities to the Secretary of State, thus bringing the regulations with regard to the institution into line with those governing the establishment of inebriate reformatories. The second part of the Bill is concerned with criminal inebriates, and gives very extended powers to courts of summary jurisdiction in dealing with offenders of this class. The restrictions imposed in Section 2 of the Act of 1898, which limited the powers of such courts to commit to inebriate reformatories by requiring that the alleged inebriate should have been convicted of drunkenness three times within the preceding 12 months, and further that he should consent to be dealt with summarily, are omitted. It is now proposed that a person convicted of simple drunkenness, or of drunkenness with aggravations, or of any offence which is triable summarily, and in which drunkenness was a contributing cause, if found by the court to be an inebriate within the meaning of the Act, may be sentenced, in addition to, or in lieu of, other punishment, to detention in an inebriate reformatory for a period of six months if he has not previously been so detained, or for a period of not less than one year or more than three years if he has already served a term of reformatory treatment. Another clause gives courts of summary jurisdiction power to deal under this section with cases of attempted suicide when the person charged is an inebriate. The sentences which may be passed on inebriate offenders convicted on indictment are regulated on the same principle as the sentences of courts of summary jurisdiction. A person sentenced to detention in an inebriate reformatory remains on probation for 12 months after release, being during that period under the supervision of a guardian. Any breach of the conditions of probation, as by failing to notify change of address, or taking intoxicating liquors, renders the inebriate liable to a prolongation of the period of probation or to a fresh sentence of reformatory detention.

With regard to institutions for criminal inebriates the Bill maintains the distinction between State reformatories and certified reformatories, but does not make any statutory condition as to committal to the State establishments. State reformatories are to continue under the control of the Prison Commissioners, provision being made, however, by a special clause for their transfer to the charge of any central authority that may be subsequently constituted by Act of Parliament for dealing with the mentally defective. Certified reformatories may be established by county councils or by private persons, and must be licensed by the Secretary of State. The duty of meeting the expenses of persons committed to reformatories is definitely imposed on the local authorities by Clause 34 of the Bill, which provides that "where a person is ordered to be sent to a certified inebriate reformatory it shall be the duty of the council of the county or county borough in which he resides (to be specified in the order) to provide for his reception and maintenance in an inebriate reformatory." At the discretion of the Secretary of State, however, a contribution to these expenses may be made by the Treasury. The definition of an inebriate suggested by the Departmental Committee of 1908 has been adopted in the Bill with some slight modifications, and now runs as follows: "The expression 'inebriate' means a person who habitually takes or uses any intoxicants, and while under the influence of such intoxicants or in consequence of the effects thereof is at times—(*a*) dangerous to himself or dangerous or a cause of terror to others; or (*b*) a cause of serious harm or suffering to members of his family or others; or (*c*) incapable of managing himself or his affairs." And the term "intoxicants" is defined to include any intoxicating

liquor, and any sedative, narcotic, or stimulant drug or preparation.

The Bill will repeal the Inebriates Acts 1879 to 1900, and the very large powers that it is proposed to give for the legal restraint of persons who have not hitherto been amenable to control will, no doubt, ensure the adequate discussion of its provisions when the measure is before Parliament. The objects which the measure has in view will certainly command the support of medical men, who have ample opportunity of appreciating the full extent of the evils against which it is directed, but their sense of the dangers of inebriety to the individual and to society should not prevent due consideration of the equally great risks which may be incurred by entrusting to private individuals such wide powers over the liberty of other persons as are assigned to the authorities of retreats and reformatories. It may be questioned whether it is desirable that authority of this nature should ever be exercised except directly by the State.

The Recreations of the Medical Man.

AN old university tutor who had trained relay upon relay of reading men to high position in the honours lists used, before they left his hands, to give them advice, drawn from experience of the after career of his pupils, and his counsel was to this effect: Form and cultivate some recreation subsidiary to your professional work—something that will give to the mind change of scene, imbuing it with a sense of resource outside its daily routine, so as to relieve it of the strain born of "sameness." Let the recreation be intellectual, moreover, of such a kind as can be enjoyed at home, without going out of doors to find it. And the kindly veteran would follow up his advice by citing examples where it had been followed—by none, he would add, with more salutary results than by the medical practitioner or consultant. The annals of the profession indeed abound with confirmation of his counsel and experience, and we are reminded by a frequent and valued correspondent that a most recent case in point was that of the eminent physician for whom the sister island is now in mourning, Sir FRANCIS CRUISE. "Fascinated from his boyhood," writes our correspondent, "with the book which has run through more editions, in more languages, than all others except the Bible—the 'Imitation of CHRIST,' otherwise called 'The Ecclesiastical Music'—CRUISE would turn from his forenoon walk through the clinical wards or from the afternoon cares of the consulting-room to the master-work of À KEMPIS, finding in it what, strange to think, AUGUSTE COMTE, the Positivist, found in it, 'one of the principal daily sources of nourishment and consolation for the soul.' It was an impressive sight to see the busy physician in his library at the close of the day, with the autograph edition (photographed in facsimile) of 1441 before him, collating its text with that of subsequent recensions, and ready on the slightest hint to reopen the perennial problem as to who was its author, which he would solve then and there by a brief but cogent assertion of the claims of THOMAS À KEMPIS, as against those of the French GERSON, Chancellor of the University of Paris, or of the Abbé GERSEN, of Vercelli in Piedmont. Even on his holiday, especially on the Continent, he would follow up his researches in the libraries of Rome, or make a *détour* to the village of Kempen, near Düsseldorf, to supplement the same and bring back fresh material for conversation and discussion, to the delight of privileged friends. The 'recreation,' for such, in the best sense it was, kept his mind, as he would often say, braced and quickened for the resumption of professional duty; nay, he would add, it lengthened his days, as it will certainly prolong his name to a posterity remote from the scene of his daily work."

Examples of active practitioners finding salutary recreation in subjects outside their professional routine, to their own advantage and to that of the contemporary world, are, as we have indicated, as numerous as they are significant, not only in the British Isles, but on the Continent; indeed, wherever the cultured medical man lives and moves. In England we have WILLIAM GILBERT, whose holiday from practice at the Court of Queen ELIZABETH was spent in the field of physics, particularly of magnetism, enabling him to anticipate OERSTED and FARADAY in the induction that terrestrial magnetism and electricity are two allied emanations of a single force; we have JAMES COWLES PRICHARD, whose "horae subsecivae" devoted to the physical history of man, fructified in treatises translated into nearly every European language qualifying him to rank as an ethnologist of the first order; we have JOHN ADINGTON SYMONDS, a busy provincial physician, whose scientific insight and philosophic temper, brought to bear upon a great artistic knowledge, created for him a high position in letters, though this was dwarfed by the achievements of his only son, the historian of the Italian Renaissance; we have in art SEYMOUR HADEN in the front rank of etchers; we have SAMUEL SMILES, whose "recreation" in engineering made him an authority on railway development and industrial biography; we have JAMES HUTCHINSON STIRLING, whose "by-work" (*παρεργον*) was metaphysics, in which he rose (according to Viscount HALDANE) to be the recognised expositor of HEGEL to the English-speaking world. Indeed, the transition of the "mens medica" to cognate fields of interest in speculation or research is often so natural, so easy, as to explain the fact that there is hardly a subject of thought or a practical *métier* in which the training and the experience of the medical man have not fitted him for proficiency, often for supreme excellence, in its cultivation, so that what was at first even a pastime becomes an absorbing interest, and perhaps a title-deed to name and fame. In the world of affairs, as has often been pointed out, court physicians have risen to posts of trust as diplomatists and Privy Councillors, European annals teeming with examples of such developments in which the British serjeant surgeon or body physician has ended by becoming the confidential adviser, formal or informal, of the reigning monarch. A book, indeed, of fascinating import might be written on the theme, proving, *inter alia*, that the training, theoretical and practical, of the medical man is in a higher than the post-Renaissance sense, "humanistic," rewarding its votary with a sympathy and (intellectually speaking) with a sense of citizenship which knows no limits whatever may be the scene of his life-work or the social plane in which his lot is cast.

Secondary Infections in Pulmonary Tuberculosis.

THE occurrence of micro-organisms other than the tubercle bacillus in the sputum and tissues of the subjects of pulmonary tuberculosis has for some time occupied the attention of clinicians and bacteriologists. Physicians have maintained that many of the phenomena observed in some patients suffering from this disease may be ascribed to the influence of such organisms, whilst the workers in the laboratory have applied various tests to ascertain the relation of the organisms to one another. No definite conclusions have yet been ascertained, and consequently the article which we publish in this issue by Dr. A. C. INMAN upon the secondary infections in pulmonary tuberculosis will be found of particular interest. The work was carried out under a grant from the Local Government Board in the bacteriological laboratories of the Brompton Hospital for Consumption and Diseases of the Chest, and the results obtained have been published in the last report of the medical officer of that Board. Unfortunately, the whole of Dr. INMAN'S valuable researches could not be published in the report. The extent of the research and the thorough manner in which it was carried out are shown by the fact that in the original manuscript no less than 61 charts had been prepared. We have been able to select only 30 for publication owing to considerations of space and the difficulty of reproducing such a large number; nevertheless, these will indicate the main lines of observation adopted by Dr. INMAN, and a careful study of them will corroborate the conclusions at which he has arrived.

We would draw attention to the title of the article—namely, the *secondary* infections in pulmonary tuberculosis. Some of the earlier investigators adopted the term "mixed infections," but the two terms are not identical. The latter term is applied to a condition in which more than one kind of infective organism invades the body at the same time, whilst the former indicates that one microbe precedes the other in point of time. Some confusion has existed owing to the fact that from the sputum more than one organism could be isolated in a large number of cases, and it has been rather hastily concluded by many pathologists that all the organisms played some part in the pathological condition that resulted. Dr. INMAN, however, points out that the mere recovery of a micro-organism does not necessarily denote it as an infecting agent; and by means of the opsonic index he has been able to demonstrate that in many cases, although several micro-organisms were present, the index to some of them was normal, thus showing that there was no evidence of infectivity in respect to those particular microbes. For instance, in Chart III. of the article, which was obtained from a patient who progressed unfavourably and who had an irregular feverish temperature, the opsonic indices demonstrated that although the index to tubercle remained within normal limits that of the micrococcus pneumoniæ, and in a less degree that of micrococcus catarrhalis, varied considerably. Dr. INMAN also points out another complication—namely, that virulent pathogenic bacteria may persist for long periods in the recently infected host, but while causing him no harm may retain their full virulence and capacity for infecting another susceptible being. The conclusions which are arrived at are interesting and suggestive. It is contended that in nearly every case of open tuberculosis of the lungs the tubercle bacillus is the predominant infecting agent, and this is an encouragement to the adoption of tuberculin as a therapeutic agent. The charts show how commonly secondary infections do occur, but, contrary to the opinions hitherto generally held, Dr. INMAN maintains that the temperature chart alone cannot determine the presence or absence of a secondary infection. Some of the charts prove this in a striking manner. Thus in Chart XV., although the temperature had a normal range, yet in addition to the tubercle bacillus the micrococcus pneumoniæ and a staphylococcus were also present. The tuberculo-opsonic index was lower than the normal limits, the index to the micrococcus pneumoniæ was normal, but that to the staphylococcus showed wide variations. It is interesting also to note the occasional behaviour of the indices of the micro-organisms in another particular. Chart XX. is that of a patient who improved considerably under treatment, and whose temperature range was only occasionally above the normal. The tubercle bacillus and the micrococcus pneumoniæ were found in the sputum. After exercise the tuberculo-opsonic index rose to 1·5, whilst the index to the micrococcus pneumoniæ fell to 0·7. Is it possible that the changes in the blood thus brought about reacted on each other and thus prevented any change of temperature? It would be interesting to obtain further researches in this matter. Dr. INMAN is at present pessimistic as regards the value of specific treatment directed against the secondary infections in advanced tuberculosis, basing his opinions on a consideration of the morbid anatomy and of the uncontrolled auto-inoculations spontaneously occurring in such cases.

The classifications of pulmonary tuberculosis which have hitherto been adopted have not been altogether satisfactory. The one based on pathological conditions—namely, the division into the stages of infiltration, softening, and excavation—is of but little use from a therapeutical point of view, whilst the one introduced by TURBAN, founded on the area of lung affected, is also open to objection. We think, therefore, that the classification adopted by Dr. INMAN merits some attention. He suggests that cases of pulmonary tuberculosis should be arranged in four groups or classes. Group 1, "resting febrile," comprises cases with an irregularly varied temperature, although the patients are resting in bed. Group 2, "ambulant febrile, resting afebrile," implies that as long as the patients are resting the temperature is normal, but when exercise is taken the temperature rises—in other words, auto-inoculations occur only on exertion. In Group 3, "ambulant afebrile," a certain amount of walking exercise can be taken without inducing auto-inoculation. Group 4, "working afebrile," includes the cases in which systematised work produces no auto-inoculation. This classification is especially useful as a guide to treatment. For cases coming under Group 1 rest in bed is essential, accompanied perhaps, in some cases, with specific treatment. Cases of the nature of Group 2 are favourable for treatment with tuberculin, whilst those who correspond with the

definitions of Groups 3 and 4 should be treated by graduated exercise and labour, accompanied, in some instances, by injections of tuberculin. We believe that if this classification were more generally adopted a considerable advance would be made in recording the results of treatment obtained by different observers. In conclusion, we offer our congratulations to Dr. INMAN on the results of his extensive and painstaking research. His work has in no small degree added to our knowledge of secondary infections in pulmonary tuberculosis.

Annotations.

"Ne quid nimis."

THE SEVENTH INTERNATIONAL CONGRESS ON TUBERCULOSIS.

As already announced, the above Congress will be held in Rome from April 14th to the 16th, under the patronage of the King and Queen of Italy, and will be presided over by Professor Guido Baccelli. The inauguration, at which Their Majesties will be present, takes place at the Castel St. Angelo on Sunday the 14th at 10 A.M., and the three sections into which the work of the Congress is divided begin their labours on the following day at 9 A.M., under the presidency respectively of Professor Baccelli (Social Defence), Professor Maragliano (Pathology and Therapeutics), and Professor Marchiafava (Etiology and Epidemiology). In addition to the ordinary business of these sections the following general addresses will be given: (1) "The Early Diagnosis of Tuberculosis," by Professor F. Kraus, of Berlin; (2) "The Etiological Importance of Social Factors in Tuberculosis—the Means of Social Defence," by Professor Landouzy, of Paris; (3) "Anti-tuberculous Vaccination," by Professor Maragliano, of Genoa; (4) "Tuberculisation and Detuberculisation," by Dr. R. W. Philip, of Edinburgh; and (5) "The Leading Considerations in Treatment by Tuberculin," by Professor H. Sahli, of Berne. During the Congress the members will be admitted free to all the exhibitions now open in Rome, viz.: (1) International Exhibition of Hygiene; (2) Exhibition of Retrospective Art at Castel St. Angelo; (3) Archæological Exhibition at the Baths of Diocletian; (4) exhibition in the new Victor Emmanuel Monument illustrating the rise of Modern Italy. In addition, by special permission of the Minister of Public Instruction, there will be free admission to all monuments, museums, and places under his control—e.g., Roman Forum, Palatine Hill, Capitoline Museums, Borghese Gallery, &c. A reception committee, composed of prominent citizens of Rome, has arranged for the entertainment of members of Congress and of the ladies accompanying them. The entertainments include a municipal banquet at the Capitol, and many free excursions, as we have said, are being arranged to Tivoli, the Castelli Romani, Subiaco, Ostia, Veii, Palestrina, Assisi, Loreto, and Monte Cassino. The number of members who have signified their intention of attending the Congress already exceeds 2000.

THE PLAGUE INVESTIGATION AT MUKDEN.

IF peace is the time to prepare for war, the present period of quiescence in relation to plague affords the proper opportunity for those who in the event of an outbreak would have the task of dealing with it to equip themselves fully. The weighty investigations and observations communicated in April, 1911, to the International Plague Conference at Mukden were reported in abstract in THE LANCET of May 13th, 20th, and 27th, and June 10th, 1911. The publication of the official report of the Congress,[1] which now lies before us, offers to all sanitary authorities and others interested in the question the opportunity of making themselves familiar with all the scientific knowledge that was there brought together and made public. The proceedings of the conference are published in full in the report. The book is excellently printed, well indexed both as to subjects and authors, and contains a number of tables and charts. There are also seven plates representing respectively: 1. A lung in pneumonic plague; lobar pneumonia showing deep hyperæmia of the bronchi. 2. Throat, larynx, and trachea in pneumonic plague, showing marked hyperæmia of the larynx and trachea; tonsil not swollen; marked hyperplasia of an incised lymphatic gland to the right of the trachea and of a small more hæmorrhagic lymphatic gland at the base of the trachea. Plates 1 and 2 are coloured. 3, 4, and 5. Photographs of the delegates to the Congress, the Chinese officials, and diplomatic corps. 6. Uniform employed for protection against pneumonic plague infection. 7. The tarabagan, or marmot (Arctomys bobac Schreb). Recent experience with the rat plague in East Anglia must convince us that this country is by no means exempt from the possibility of an outbreak, so that the volume should have an interest not only for those British practitioners in tropical regions, but for many in this country also.

THE DEAF AND DUMB UNDER THE WORKMEN'S COMPENSATION ACT.

Mr. Ellis Griffith has received recently a deputation representing societies interested in the welfare of the deaf and dumb. The object in view was to place before the Government the hardship accruing to the deaf and dumb, owing to the increase of the difficulty always and unavoidably found by them in obtaining work, which arises out of the operation of the Workmen's Compensation Act. It has often been pointed out by those who have no hostility towards the Act itself in its application to the workman who is physically normal, that the rigid nature of the provision against contracting out of the benefits conferred deprives many workmen who are not physically normal of all means of earning their livelihood, or, at least, places a fresh difficulty in the way of their doing so. It will readily be understood that a man who is lame, a man who has one eye, or a man with an infirmity of the heart, to give examples at random, is not likely to be engaged by an employer who can find a sounder workman when he knows that such an infirmity in readily conceivable circumstances may have two effects. It may increase the workman's chance of an accident occurring to him, and it may also increase the amount of compensation to be paid by augmenting the resulting incapacity. In the case of the deaf and dumb the effect of the accident would not probably be increased by the workman's pre-existing infirmity, but he would certainly in many industries be more likely to sustain one than a man able to hear a warning or an order. The Rev. W. W. Adamson, introducing the deputation, explained that in some small workshops employers were willing to engage deaf-and-dumb workmen, provided that they would bear the extra cost of insurance incurred through their condition, but that this brought the employers and workmen into collision with the trades unions when it had as its effect the payment of less than the standard wage. The result was that the deaf and dumb were brought down in increasing numbers into the ranks of the casual labourers. Mr. Ellis Griffith, in reply, had little to

[1] Report of the International Plague Conference held at Mukden, April, 1911. Manila: Bureau of Printing. 1912. Pp. 483. Price, paper $2.50, cloth $3.50.

suggest. Indeed, his opening observations were hardly sympathetic, for he seems to have said that it was impossible either by sympathy or by legislation to put the deaf-and-dumb man upon the same level as the hearing man. This had not been asked for or suggested, the complaint being that legislation had placed the deaf-and-dumb man upon a lower level than that which he previously occupied unavoidably through his infirmity. Mr. Ellis Griffith, however, referred to the fact that in passing the Act an amendment had been moved and lost which would have covered the case of the deaf and dumb, and made one or two other observations. With regard to one, he did not regard it as unreasonable that insurance companies should be asked to insure unsound men at the same rate as others, but he was of the opinion there would be difficulties in the way of bringing pressure upon them to do so. One rather remarkable suggestion that he put forward was in the nature of a hint that although no one had asked that the State should make up the difference between the ordinary and the increased premium, the State was at the present time accepting responsibilities which it had not undertaken before towards those in exceptional circumstances, and that such a proposition, if the deputation had advanced it, would not have seemed to him so extraordinary now as it would have seemed if it had been made ten years earlier. Finally, he referred again to the point we have already alluded to, and said that it was a topic for consideration whether the Home Office could bring pressure to bear upon insurance companies in order that they might take a less commercial and more sympathetic view of the matter, although why insurance companies should conduct their business on other than commercial lines, or what possible right they would have to convert themselves, even in part, into charitable institutions he did not explain. It is of interest to note that Mr. Ellis Griffith stated also that it was in contemplation to appoint a committee to consider possible amendments of the Workmen's Compensation Act, but it is also to be observed that he held out no hope that such a committee would be appointed soon, and only mentioned it in order to say that if it were ever constituted the questions raised by the deputation would form a proper subject to inquire into. The hardship arising out of the operation of the Workmen's Compensation Act is of a real character, although it affects only a limited number of workmen, and the same may be said of the policy of trades unions in so far as it prevents men from getting any regular work whom employers might be willing to accept at reduced rates of payment proportional to the amount of incapacity produced in them by physical infirmity. The effect in both cases is felt by the community as well as by the workmen themselves. The latter are driven into casual labour or into unemployment, thus becoming a public burden. Their physical incapacity, whether it be capable of diminution or not with time and care, is likely to be augmented by the conditions in which they are compelled to live through no fault of their own.

THE REPORT OF THE CORONER FOR THE CITY OF LONDON AND SOUTHWARK.

Dr. F. J. Waldo in his annual report of his work as coroner informs the Common Council that in 1911 he held within their area (the City and Holloway Prison) 189 inquests upon dead bodies (141 males and 48 females), as against 165 (121 males and 44 females) in 1910. In the borough of Southwark he held 255, as against 236 during 1910, the proportions of the sexes being 179 males to 76 females in 1911, and 146 males to 99 females in 1910. He does not ascribe this rather marked increase of 43 deaths demanding inquests to any particular cause, but it is to be noticed that the number of deaths caused by vehicles in the combined areas of the City and Southwark was larger by 19 during the year under consideration than during 1910, the total of 57 being the highest that Dr. Waldo has had to record. Increased motor traffic is, no doubt, in a measure responsible, but in the City and Southwark area the proportion of accidents due to horse-drawn vehicles is still comparatively high, 11 deaths out of 29 having been caused by them in the City and 7 out of 28 in Southwark. Out of 297 deaths to which juries assigned causes other than natural, 240 were found to be due to accidents, 28 to criminal acts, 7 to excessive drinking, and 4 to want and exposure. In 18 instances there were open verdicts. Dr. Waldo, as usual, in his report refers to a good many topics of interest to those concerned with the prevention of avoidable loss of life. In particular he deals at length with fires and with the desirability of extending to Southwark the powers granted to him by Act of Parliament, so far as the City is concerned, to hold inquests where necessary for ascertaining the causes of fires which have not had loss of life as their results. "If such inquests should be held in Southwark as well as in the City, why not everywhere?" is the question which naturally arises out of this suggestion, and although the point is not so put by Dr. Waldo he gives some good reasons derived from his City experience for the introduction of such a change into the law. We observe that Dr. Waldo held 11 inquests in the year in Southwark upon children suffocated when in bed with their parents or others, and that he observes a decrease in the number of such cases during recent years. That is good, but we note that out of 33 persons burnt and 12 scalded to death in his two jurisdictions the majority were children under seven years of age left alone in rooms with insufficient precautions against their thus injuring themselves. Both these sources of danger to children, overlying and burning or scalding, have recently been dealt with by the legislature, but in a half-hearted way which can have done but little towards protecting child life. Dr. Waldo again refers with approval to the use of Herscher's apparatus in the City for the preservation by means of formalin of bodies awaiting identification. This also he recommends for adoption in Southwark, and again we suggest that what so experienced a coroner desires to see employed in Southwark might usefully be considered with a view to adoption by the local authorities in other places, especially, of course, in those urban districts where inquests are many and where identification is often delayed.

ACUTE DILATATION OF THE STOMACH FOLLOWING HERNIOTOMY UNDER LOCAL ANÆSTHESIA.

THE causation of acute dilatation of the stomach following abdominal operations is still somewhat obscure. In the *New York Medical Journal* Dr. H. H. M. Lyle has reported a case which seems to suggest one possible cause. A man was operated upon for a large right inguinal hernia. Local anæsthesia was induced with ¾ grain of novocaine by the combined infiltration and intraneural method. The hernia contained a large amount of omentum, the redundant portion of which (weighing 4 lb.) was removed to prevent recurrence. The hernia was repaired by Bassini's method. The patient was returned to the ward in excellent condition and was allowed tea and toast, which is the routine for patients operated on under local anæsthesia. About an hour later he began to complain of pain and distension in the epigastric region. The usual carminatives, enemata, and stupes failed to give relief. He vomited a large quantity of brown watery-coloured fluid, which gave some temporary relief, but the distension began to increase rapidly. The lower border of the stomach seemed to be about 3 inches below the umbilicus. He

became extremely restless, with a rapid running pulse of 135 to 150, and soon passed into a condition of partial collapse. Repeated gastric lavage with postural changes gave temporary relief, large amounts of fluid and gas escaping. Eight hours after the onset of the attack the lower border of the stomach seemed to be in the right iliac fossa. On the following morning the distension began to decrease and all the acute symptoms disappeared within the following 48 hours. He was discharged from hospital at the end of four weeks and cautioned to remain under observation as the herniotomy scar had been put to a severe test. The hernia recurred in a short time and was repaired under ether. Uninterrupted recovery followed this operation. Dr. Lyle suggests that the removal of such a large portion of omentum profoundly altered the circulation and possibly the nervous mechanism of the stomach, inducing temporary paralysis. The importance of the case is increased by the fact that a cause of dilatation sometimes given, the toxic action of ether or chloroform, is excluded. So also is rough handling of the stomach or intestines. Great care was taken to avoid all unnecessary handling, and the omentum was not dragged on.

A SCOTTISH JOINT HOSPITAL BOARD AND ITS MEDICAL SUPERINTENDENT.

A PARAGRAPH will have been noticed by some of our readers, occurring principally in Scottish newspapers, which stated that "At the monthly meeting of the Renfrew and Clydebank Joint Hospital Board the recommendation to dismiss Dr. Butchart, medical superintendent of Blanarthill Hospital, was considered. Dr. Butchart refused to carry out the instructions of the board to treat scarlet fever patients under what is known as the Milne system, which, it was declared, reduced the period of detention of patients in the hospital." The paragraph went on to amplify the reasons alleged at the meeting in question for the adoption of the "Milne system," including a statement that the board in question, if it had been adopted in 1908, would thereby have effected an economy of £11,305. On the other side there was the contention that the board had no right to dictate to its medical superintendent the course of treatment that he was to employ upon patients coming under his care, and a statement that "the Milne system was not recognised to any extent by the medical profession." The paragraph concludes: "As a result the board, by a majority of one, adopted resolutions to terminate the engagement with Dr. Butchart and to advertise for a new medical superintendent." We need not enter into any discussion of the merits claimed by Dr. Milne for his system of treatment for scarlet fever or of the degree of its acceptance by the medical profession, but are concerned rather with the conduct of a hospital board which has first endeavoured to dictate the course of medical treatment to be followed by its medical officer, and upon his declining to accept such dictation has dismissed him from his post. In other words, the members of the board, by a narrow majority, have ordered their medical officer to try an experiment upon the bodies of the patients entrusted to their charge in their capacity of a public body; he has expressed his opinion against the advisability of such an experiment in the most forcible and unequivocal manner open to him, and they have expressed their determination to employ no medical man who will not be subservient to them in such matters—i.e., in the medical treatment of his patients. It is for the members of the Renfrew and Clydebank Joint Hospital Board to consider their position, not only as a public body responsible to those whom they represent, but personally if they have exceeded the limits of their proper authority. The position of the governors of a hospital, whether voluntary or rate-supported, has been pretty clearly defined in cases where a patient has complained with regard to his medical treatment, but such a claim advanced against governors who have usurped the functions of their medical officer would be a very different matter. With regard to the action of Dr. Butchart, no medical man, and, we should think, but few laymen, will express anything but unqualified approval. A man in the position which he now ceases to occupy is responsible in the eyes of his professional brethren for the welfare of his patients, having as his plain duty to treat them according to the best of his ability and judgment. Is he placed otherwise in the eye of the law? If so we should like to know upon what grounds, always bearing in mind that we are discussing the case of one who might have to say: "I treated a patient committed to my care in a public institution in a manner in which I should not have treated him if he had been my private patient, and I did so because the persons who engaged me and who pay me my salary ordered me to do so, and would have deprived me of my post and salary if I had refused." The circumstances of Dr. Butchart's dismissal are for the serious consideration of anyone who may contemplate the possibility of filling his post, and presumably more will be heard of the manner in which it has been declared vacant. Meanwhile we accord to Dr. Butchart himself our full sympathy and congratulate him upon having acted in accordance with the dictates of personal and professional honour.

PRIMARY SARCOMA OF THE STOMACH.

CLINICAL and pathological rarities are dear to the writers of medical monographs, as is shown by the list of contributions to medical literature treating comprehensively of primary gastric sarcoma. The latest article on the subject, by Professor A. Gosset, of Paris, in *La Presse Médicale* of March 16th, is brief and practical. A new case is recorded, that of a man, aged 61, who was sent to Professor Gosset on account of an epigastric tumour, the appearance of which had been preceded by a year and a half of vague indigestion and loss of flesh. The swelling was first noticed by the patient himself six months before he came under Gosset's notice, and during this time it increased rapidly in size. There was neither vomiting nor hæmorrhage. The tumour felt in the epigastrium was hard, craggy, and painless, moveable in both directions, and separable from the liver. Radioscopy demonstrated a normal transverse colon, but the cavity of the stomach was narrowed to a mere channel by a dark mass projecting into it from above downwards and to the left. At the operation this mass proved to be a firm growth about the size of a large fist, lying in the concavity of the lesser curvature. It was removed, together with about a quarter of the stomach, between clamps, the cut surfaces being brought together by suture. The after-symptoms confirmed the fears expressed at the operation, that the artificial gastric channel would be too narrow; accordingly a gastro-enterostomy was performed with satisfactory results, and six weeks later the patient was doing well and increasing in weight. The pathologist reported that the tumour was a spindle-celled sarcoma, probably arising from the muscular layer of the gastric wall and possibly representing the malignant development of a myoma. Gosset, in reviewing the recorded cases, 171 in number, divides them into two groups: in the one the tumour is endogastric and in the other exogastric. It seems that extension to other organs is less common than in cases of carcinoma of the stomach, and the possibility of gastrectomy is therefore determined largely by the size of the tumour. Symptoms are often wanting; the absence of vomiting is possibly explained by the fact that the pylorus is not often implicated, the growths arising frequently from the middle zone of the stomach. Hæmorrhage is unusual, which is singular in view

of the frequency of ulceration of the gastric mucous membrane in such cases. Chemical examination of gastric contents has given conflicting results; but radioscopy after inflation of the stomach is of the greatest service in diagnosis. Operative treatment has been undertaken in 61 cases; in 47 of these a more or less extensive and complete removal was practicable, with results that are encouraging when the desperate nature of the disease is considered, the immediate mortality being about 35 per cent. Several of the patients are known to have survived for years.

CHINESE MEDICINE.

CHINESE medicine may be regarded to some extent as a survival of the dark ages, much of it being based upon a belief that all diseases are due to supernatural causes and are mainly occasioned by offended evil spirits which the native practitioner seeks to propitiate or drive off by charms, incantations, or other devices. Even at the present day, in some localities, the natives may still be found burning large quantities of gold and silver paper along with incense in the hope of averting, for example, a threatened invasion of their homes by cholera, plague, or small-pox; or firing guns and beating gongs or cymbals in order to frighten away the malignant spirits likely to give rise to mischief. When the native practitioner attempts to treat disease with medicinal remedies these are often derived from strange sources and sometimes they are even of a disgusting description. Hitherto great difficulties have been encountered by Europeans when trying to obtain trustworthy information regarding the incidence of disease and mortality in different parts of China, there being no arrangements for the certification and registration of the causes of death. The only way, we understand, in which any undue mortality in a locality can be estimated is by ascertaining from the local undertakers how many coffins they have sold within a given period and comparing that with the number vended in normal times. But this method may be found far from accurate, since it is known that the jealous coffin-maker upon occasion, fearing that his craft is in danger, purposely falsifies his figures in order to mislead the foreigner. Epidemics of dangerous infectious disease have not in the past been without injury to countries having close commercial relations with China, to which country, also, the origin of some pandemics has been traced. As instances of this we may cite the two great pandemics of influenza and plague which have so recently swept over the whole world, starting in Central China and travelling from east to west. It need hardly be added that notification of communicable diseases and public provision for their isolation are entirely lacking in China; proper sanitary administration by local or central authorities has yet to be established. Sometimes the first intimation that the foreigner in China receives of the presence of epidemic small-pox in his locality is by meeting convalescents in the streets with the marks of their recent illness still visible upon their faces. But there are indications at the present moment that sweeping changes are about to take place, and the great awakening of the Chinese nation now in process is likely to be followed by marked improvements in the medical treatment of the sick as well as in the prevention of disease generally. The educated Chinese are fully aware of the great superiority of Western medical and surgical methods, and during the recent revolutionary riots some of the lower classes had also occasion to view very favourably the surgical assistance given to them by the foreign medical men. The number of qualified medical men in China with European or American training is on the increase. Several medical schools with foreign professors have been set up in various places for the purpose of educating suitable natives in the science and practice of modern medicine and surgery. Much valuable information respecting diseases in China has been given by the medical missionaries, who have done admirable work in their hospitals and in the homes of the people.[1] Apart from the official reports from the medical officials at such places as Hong-Kong and Shanghai, a great deal of our knowledge as to the incidence of illness on the foreigner and on the native has been derived from the half-yearly medical reports of the Chinese Imperial Maritime Customs. These reports were initiated by Sir Robert Hart, the Inspector-General, in 1870, and with the exception of a recent break, they have been continued since that time up to the present day. Chinese medicine at this moment seems to be undergoing a transition, but we may mention as interesting a few facts taken from the last issued group of reports[2] by the medical officers attached to the Chinese Customs establishments at the free ports on the sea coast, in the interior of the country, along the banks of the great navigable rivers like the Yangtse Kiang, or at towns on the land transport routes near the frontiers of India and Thibet. Although these reports show an increasing native appreciation of the Western methods of medical treatment, it is to be observed that consultation of the foreign medical man is commonly delayed until the native practitioner has exhausted his own repertory, and in this way valuable time is lost and the patient is then too far advanced in his illness to derive benefit from any rational treatment. This delay is more particularly disastrous in midwifery cases. In Yunnan, the second largest province in China, the parturient woman, we are informed, receives no assistance, the course of the confinement being left entirely to nature. If the European medical man is summoned it is only after the woman has been in labour for three or four days, and when she is obviously in a dangerous condition. It is not uncommon, indeed, for the medical man on his way to see such a case to be met by a messenger announcing that the woman has just died undelivered. The practice of midwifery is said to be held in low esteem, and those attending confinements are looked upon as dirty and despicable individuals. In Yunnan, if a woman fails to make a good recovery after the birth of her child, her friends, we are told, make her drink daily for a week or more some urine that has been passed by a young boy, this being considered an excellent tonic! Some native practitioners impose upon their patients with worthless medicines having high-sounding names. An example of this is given in which the practitioner's whole pharmacopœia consisted of a single small phial labelled "The Remedy of Immortality," which was prescribed for every variety of complaint. Tuberculosis is reported to be increasing in China, and this is partly attributed to the unwholesome conditions, such as overcrowding and lack of ventilation, under which many of the people live. The filthy habit is common of expectorating indoors upon the walls or floors, in the corners of rooms, or behind the doors. In some hospitals the majority of the surgical cases are due to tuberculous disease of bones, joints, or glands. Personal hygiene is often greatly neglected; in some districts most of the population suffer from itch, eczema, ringworm, or other communicable complaints, while their long finger-nails harbour all sorts of germs. The dangers arising from the Chinese method of manuring vegetable crops is mentioned, as also the filthy conditions under which milk is produced for sale to Europeans. Leprosy seems to be not uncommon in some provinces: Kwangsi, for example, where practically nothing is done to control the lepers, and these poor unhappy half-starved wretches are allowed to wander up and down the country in search of food, constituting a grave danger to

[1] See THE LANCET, March 9th, 1912, p. 685.

[2] Chinese Imperial Maritime Customs Medical Reports. II. Special series No. 2. Published by order of the Inspector-General. Shanghai, 1911.

other persons. We think we have said enough to show that there is pressing need for improvement in the methods of treating sickness and of preventing disease in the Chinese Empire, in which only a fraction of the 430 millions of its population have any chance of receiving when ill the benefits conferred by modern scientific medicine.

THE CURABILITY OF IDIOPATHIC EPILEPSY.

Dr. L. Pierce Clark, consulting neurologist to the Craig Colony for Epileptics, New York, has published in the *Archives of Internal Medicine* for January an account of 29 cases of idiopathic epilepsy personally observed where a cure has resulted, no fits having occurred after a given number of years. As Dr. Pierce Clark's figures are in advance of those attained by any other physician his paper deserves the attention of the profession, apart from the fact that his position as a specialist in epilepsy is acknowledged by all neurological workers in America. What constitutes a cure in epilepsy is a matter as difficult to settle as the definition of idiopathic epilepsy itself. The establishment of a time-limit as a criterion is unsatisfactory, for it may vary from two to 20 years, or more. Dr. Pierce Clark does not commit himself to any definite interval of years as constituting a cure, and, faced by the obvious difficulty of explaining the correct attitude to adopt to the patient's friends, when the prognosis is asked for, prefers to use the term "arrest." It is clear that no time-limit can be entirely without possible defect, for we have seen an epileptic woman who remained free from fits during the whole of her reproductive life, from the age of 14 to the age of 44, an interval of no less than 30 years; but both before and after these ages she was subject to typical idiopathic fits. While, therefore, such a case cannot be hailed as a cure, in the strict sense, to describe the disease as arrested is eminently justifiable. It is in the sense of "arrest" that Dr. Pierce Clark talks of "cure." No doubt spontaneous cures have been reported from time to time, but such cases are difficult of interpretation. Academic discussion of terminological questions, however, is of less importance than a consideration of the therapeutic methods adopted by the American observer. If a patient remains free of fits for years, it matters little whether one considers the disease cured or merely arrested. Some self-applied plan of hygienic treatment is of fundamental value—a broad, rational plan of living which may be pursued by the patient under occasional medical supervision. This is essentially a non-sedative method—i.e., a method in which the accepted sedatives find little or no place. Most observers who have any wide experience of epilepsy will agree with Dr. Pierce Clark that many patients treated by sedatives steadily advance in physical, mental, and moral deterioration, notwithstanding a definite cessation of fits. The bromides cannot be held to be curative agents; their utilisation as diagnostic and therapeutic adjuvants is their only merit. There can be little doubt that true epilepsy is a cortical disorder, of which the fits are but one of the psychic incidents; we should speak, therefore, not of "epilepsy" but of "the epilepsies," as Hughlings Jackson used to do, and we should not allow the visible discharging phenomena to usurp our whole attention. The training and dietetic *régime* employed by Dr. Pierce Clark is of great practical value, and we may quote some sentences from his programme for a typical case of the disease occurring in an otherwise healthy young man of 20. "The patient is placed with a nurse-trainer in a congenial but quiet country environment, away from the family by preference. The patient rises at 6 A.M., and takes 10 or 15 minutes of active calisthenic exercise. ..... He then takes a glass of hot water, a cold shower-bath and a brisk rub-down, and breakfasts on an egg, small amount of cooked cereal, a glass of milk and some stewed fruit. After breakfast he takes a walk of 6 to 8 miles. ..... He then takes a glass of milk, and one or two strips of zwieback. ..... He works at some useful occupation till 12.30. He then lies down without undressing, sleeps or not for half an hour, and is then given dinner of fish and milk, vegetables, cereals, and stewed fruit. ..... He is then allowed to sleep for an hour. ..... Then follows work as in the morning, then rest, reading, or study from 5 to 6 P.M. Supper of milk, eggs, cereals, and stewed fruit is given at 6.30. The patient is then allowed games, recreation, &c., until 8.30. He then takes the special treatment of a warm bath, general massage, &c., and is in bed for the night at 9.30. No alcohol, tobacco, tea, or coffee is allowed. He is encouraged to drink at least two quarts of water daily. High colon irrigations are given every other night, and every ten days castor oil or calomel in divided doses is given. The articles of food ..... are changed every fortnight, and the occupation too if desired." Dr. Pierce Clark says he has never known a patient not benefited more or less permanently by this plan—surely an excellent testimonial to its abiding value.

FREQUENCY OF TUBERCULOUS INFECTION IN CHILDREN.

ALTHOUGH some 30 years have passed since the discovery of the bacillus of tuberculosis, no absolute certainty exists as to the exact way in which infection is most commonly produced. Koch's original opinion, that inhalation of organisms derived from human disease is the important factor, still commands pretty general assent, but another school has arisen which holds that infection starts in infancy by consumption of tuberculous milk, the bacilli lying latent until some depression of vitality in after life gives them a chance to multiply and cause serious disease. In view of the existing doubt it is important to obtain trustworthy information as to the frequency of tuberculous infection in infants and children and as to the apparent portal of entry of the germs. As to the frequent occurrence of tuberculous foci in children authorities are agreed, statistics derived from post-mortem examinations giving a percentage of infected cases varying from 35 in London (Still) to 42·5 in Christiania (Harbitz). Attempts to obtain further information by the employment of the tuberculin test have also been made, the results confirming the view as to the frequency of infection in children. A recent investigation on these lines has been carried out by Dr. Charles M'Neal and recorded in the *Edinburgh Medical Journal* for April. The investigation concerned a series of 541 cases, 371 of these being children in the Royal Edinburgh Hospital for Sick Children and the others 170 boys in an industrial school. The method of employing the tuberculin was a modification of von Pirquet's procedure, undiluted "old" tuberculin being rubbed into an abraded point of skin. The results obtained showed, even within the first year of life, a percentage of infection of 14·1, the ratio rising till it attained a height of 46·6 in the fourth and fifth years of life. Among the boys of the industrial school, drawn from the most necessitous classes, the percentage of infection actually reached a figure of 64·7 in boys aged 15 years. It was remarkable, in comparing the figures with those recorded by von Pirquet and others in Austria, that whereas the general mortality from tuberculosis in the latter country is much higher than in Scotland (36·25 compared with 12·53), in Edinburgh the percentage of infection among children was actually greater. The more frequent occurrence of abdominal tuberculosis among

children in Great Britain suggests that infection by tuberculous milk may be the factor which explains the unfavourable conditions thus revealed.

Mr. Vincent Sutherland Hodson, M.B. Oxon., has been appointed a member of the Fourth Class of the Royal Victorian Order.

TELEGRAPHISTS' CRAMP.

AN EXTRACT FROM THE REPORT OF THE DEPARTMENTAL COMMITTEE, GENERAL POST OFFICE, ON THE SUBJECT WITH ADDITIONAL MATTER.

BY H. THEODORE THOMPSON, M.D. CANTAB., F.R.C.P. LOND., F.R.C.S. ENG.,
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AND
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SECOND MEDICAL OFFICER, GENERAL POST OFFICE.

(*The Medical Subcommittee.*)

PART III.[1]

Prevention of Cramp.

FOR prevention of cramp we submit the following suggestions for consideration. These suggestions may be grouped under three heads :—

(*A*) *Suggestions as to the Selection and Tuition of Candidates for Telegraphic Situations.*

1. Careful selection of the staff on appointment, and a thorough examination by a medical officer and a telegraphic expert during the probationary period. This examination should be specially directed to the exclusion of learners with temperamental or physical unfitness.
2. A previous knowledge of typing is to be recommended as some indication of an aptitude for telegraphic work.
3. Ambidexterity of learners should be encouraged.
4. Improvements may be made in the method of tuition and in the organisation of the teaching in schools.

(*B*) *Organisation of General Work.*

1. Limitation of the hours of Morse sending.
2. Alternation of instruments.
3. Encouragement of the staff to report symptoms of difficulty in sending as soon as possible.
4. Attention to general health.

(*C*) *Improvements in Instruments and Apparatus.*

1. Regular adjustment of instruments by skilled officers.
2. Standardisation of the range of spring resistance in the keys.
3. Correction of faulty arrangements in desks and chairs.

We have shown that the nervous breakdown known as telegraphists' cramp is the result of two factors—one a nervous instability of the operator and the other the occurrence of repeated fatigue during the complicated muscular movements required for Morse sending. This fatigue is relative to the nervous state of the operator and not to the amount of work performed. If the conditions which lead to fatigue and are above enumerated can be remedied, the personal factor alone remains as a cause of cramp, and this can only be eliminated by a careful and judicious selection of the staff.

Details of Six Cases of Telegraphists' Cramp specially examined by the Subcommittee.

CASE 1.—Male, age 39. Learnt telegraphy in the London Telegraph School; was in the school for 14 weeks. Morse operator for 22 years. For the first 20 years no symptoms of any kind; was always considered an efficient operator. Had been selected for special duty on account of his efficiency. Had always been in a busy commercial division, but had not had any special strain before the first appearance of the symptoms. The first symptoms appeared two years ago, when he began to lose flexibility, and telegraphy became such an effort that he continually felt he wanted to rest his arm. No sharp pain, but a dull ache, felt only when keying. No outside worry. No complaint had been made of his work; brought his case under notice himself. Taught himself to key with his left hand after his right became affected, but the same sensation appeared in the left hand after a time; could key, but not so fast. Health good; absent for 14 days only in 22 years. Family history good.

Present condition.—Has not been employed on manipulative work for some time, but is not out of practice. Sending with his right hand now causes serious pain. While sending he grips the key tightly and seems unable to release it, making undue pauses between the words. He holds his knee tightly with his left hand and moves his head, left shoulder, back, and, in fact, his whole body, in unison with his sending. The whole attitude is one of strain and excessive muscular movement. He has no difficulty in using his hand for any other action than telegraphy; can write, "punch," work with the Gell perforator and Hughes keyboard instrument, and use knife and fork.

Digestive, vascular, and respiratory systems normal. Nervous system: No tremor, no incoördination, no abnormality in myotatic irritability, no tenderness of nerves, no impairment of sensibility to touch or pain. Muscles: No atrophy; small muscles well developed in both hands. Electrical reactions normal to faradism and galvanism: K.C.C. > A.C.C. By dynamometer, right hand = 210, left hand = 200. Cranial nerves: Movement of eyes, tongue, and face normal. State of pupils normal; reaction to light and accommodation good. Optic discs normal.

CASE 2.—Male, age 43. Learnt telegraphy in the London Telegraph School; was in the school seven weeks. Morse operator for 28 years, with an interval of six or seven years when he was on counter duty. This occurred after 10 years' service. He had been employed on busy circuits. He had no special strain before the difficulty commenced, but about four years previously he was employed on a cycle of duties which consisted entirely of keying, and afterwards he had more sending to do than any other kind of work. Difficulty commenced in 1908, after 26 years' service. He first had a feeling of tiredness and loss of suppleness, followed by difficulty in forming certain letters—q, p, c, v. He had no actual pain until April, 1909, when he noticed also that his hand would slip off the key. By June the pain had become so bad that he brought the matter under notice. Anticipation of keying caused uneasiness, and the pain started a few minutes after he commenced work. There was a continuous dull pain, and occasional sharp pains, from his fingers to his shoulder. He even had the pains at night, waking up with them. When his difficulty was brought under notice he was relieved of keying duties; and 10 weeks afterwards all trouble left him and he has had no pains since. It was reported that no complaints had been made as to the quantity or quality of his sending. Health: He stated that, apart from his difficulty in manipulation and the consequent anxiety, his health had been good. The official records show an absence of 45 days for influenza in 1907, and eight single days since 1906. Family history good.

Present condition.—Stated that he has tried to use his left hand, but he is too old to become expert with it and it soon becomes tired. He has no difficulty in "punching" or in writing, even for long periods. He has no difficulty in any other actions besides Morse keying. He has been practising on the Gell perforator, but is not yet expert. He has not learned the Hughes. Is almost a total abstainer. Smokes weekly 3 to 4 ounces of light tobacco. He cycles and is fond of photography and fishing. States that he followed the style of manipulation he had been taught in the school. He did not grip the key or hold it rigidly before the trouble commenced. The gripping of the key at the present time was the result of the spasm. While keying moves arm, shoulder, and head, steadies himself with the left hand on the table or on the left leg. Respires jerkily and breathes in a short, catchy maner; has difficulty in releasing the key.

Digestive, vascular, and respiratory systems normal. Nervous system: Is rather of a nervous type of man, dark and thin; no headaches, no fits; suffers somewhat from sleeplessness; no tremor, no incoördination, no impairment of sensibility to touch or pain. Myotatic irritability: Patellar tendon reflex glib; no ankle clonus. Muscles: No atrophy. Small muscles well developed in both hands. Electrical reactions normal to faradism and galvanism. By

[1] Parts I. and II. were published in THE LANCET of March 30th (p. 888) and April 6th (p. 941), 1912, respectively.

dynamometer, right hand = 115, left hand = 100. Cranial nerves: No abnormality. Optic discs normal.

CASE 3.—Male, age 36. Began in 1889 as a telegraphist at the age of 15 in the provinces, where he was employed on the single-needle instrument. He learned the sounder in 1891, and has been a Morse operator for 19 years. He stated that he had no regular instruction, but picked it up himself as best he could. He was transferred to London in 1894, and he was then said to be "a very free telegraphist." He applied for employment on special news wires in Fleet-street, where he remained until about 1901. He worked from 6 P.M. to 6 A.M. for six days a week, and his duties consisted of sending only. He received extra-duty pay for the long attendance, and an additional bonus if he sent more than a certain quantity of news. He states that he used to grip the key in order to send firmly. After his difficulty began he tried sending in various ways, varying his style of manipulation. He first experienced difficulty in sending with his right hand ten years ago, after nine years of employment on Morse working, and the difficulty has been growing worse for the last seven years. At the commencement his hand was stiff for the first half-hour or so after coming on duty, but the stiffness then passed off and his arm was affected by a dull pain and tired feeling. He first had difficulty in sending the letter c, and the difficulty gradually extended to other letters. Health: Pneumonia six years ago. Absent for a week on account of neurasthenia two years ago. Family history good.

Present condition.—He now feels a dull pain in his arm as soon as he prepares to begin operating; but he feels no pain, even if he adopts the same attitude, if he is not engaged on manipulative work. Employment on manipulative work causes him to have bad headaches and interferes with his general health. He performs the action of sending and fancies he hears the sounder in his sleep. His recreation is walking; he does not engage in any other outdoor exercise, and since his trouble he has walked more than before. His messages on slip are often illegible, but his sending is perfectly readable on the Morse sounder. During the seven years that he has experienced difficulty no complaint as to his sending has been made either by his superintendents or from the offices to which he has worked. While keying there is excessive action of the hand, forearm, and shoulder. The head also is jerked rhythmically with the arm. He steadies his head by holding his chin with his left hand, his left elbow resting on the table. The position of the hand on the key is fair, but the thumb is jerked off the key at each movement; and there is spasm of the fingers, which refuse to release the key. He has no trouble in writing unless he is writing for a long time. For the last five years he has used the left hand. He rests the left forearm on the table, and uses either the third or little finger of the left hand to depress the key with a scraping action. Soon after starting, whilst demonstrating his malady, the whole body was affected by spasmodic jerks which shook the table at which he was operating. He has difficulty in using his left hand for other actions than manipulation, as, for instance, in using a knife and fork or winding up the spring of a Morse printer. On attempting to pick up a pin the left hand becomes rigid, and rapid fine tremor occurs. He was tried for a time on the Hughes, the Gell perforator, and the Yetman instruments, but he had difficulty with his left hand and had to be relieved from the work. He has difficulty in using his left hand whatever operative duties he performs.

Digestive, vascular, and respiratory systems normal. Nervous system: Well developed; not a nervous type of man; no incoördination; no impairment of sensibility to touch or pain; no tenderness of nerves; sphincters normal. Myotatic irritability: Patellar tendon reflexes very glib; no ankle clonus. Muscles: Very muscular. Tendency to spasm in left arm on any voluntary effort, but no spasticity. Electrical reactions normal to faradism and galvanism; K.C.C. > A.C.C. By dynamometer, right hand = 200, left hand = 190. Cranial nerves normal; optic discs normal.

CASE 4.—Male, age 41. Taught himself telegraphy; did not learn in a school. He was first employed at a railway office, where he worked the Morse instrument. He always had a free style of sending, and never gripped the key. Morse operator for 25 years. He first began to experience difficulty about 15 years ago, after 12 years' employment on manipulative work. He found his right arm tire after about half an hour's sending, and began to learn to use his left hand. He gradually lost control of his right hand for sending, not over certain letters, but generally. Pain was not felt until a later stage. The pain commenced at base of thumb and extended to his neck. He had also pains in the head. Difficulty in writing and keying commenced about the same time. He tried to use his left hand for writing, but was unsuccessful. He had pains in his side as a result of using his left hand. Called attention to his difficulty in writing in July, 1909. Health good, as was also the family history.

Present condition.—Spasm is not pronounced, and there is no marked action of hand, elbow, or shoulder; at times the elbow moves a little; body does not move. He has difficulty in using his right hand for other actions than writing and keying. He has pain and stiffness in "punching"; and he cannot use the Gell, Yetman, and Hughes instruments owing to short fingers. In digging he has lost control of his right hand at times, experiencing a sudden momentary pain, and he then has to stop and rest. Can shave, use knife and fork, &c. In October last he could not be employed on any instrument, and employment on night circulation duties was suggested. He has been employed on night circulation duties for the last six months. Drinks about 1 pint of malt liquor daily, and smokes about 3 ounces of a tobacco mixture weekly.

Digestive, vascular, and respiratory systems normal. Nervous system: No headache; no fits; sleeps well; no incoördination; no impairment of sensibility to touch or pain. Sphincters normal. Myotatic irritability normal. Muscles: Well developed in both arms and hands. Electrical reactions normal. By dynamometer, right hand = 160, left hand = 150. Cranial nerves and optic discs normal.

CASE 5.—Male, age 43. Was taught telegraphy in the London Telegraph School, entering at the age of 15; was in the school for three months. Morse operator for 28 years. He was employed for eight years at the Commercial Sale Rooms, where half his time was occupied with counter duties and half with telegraphy. He was never subjected to special strain, but exerted himself to send as much as possible. He has had discomfort in sending for about five or six years. It began with loss of control, which was general and not over certain letters. He states that his style was originally free, and that he did not then grip the key. To regain control he gripped the key, and this led to pain. He taught himself to send with his left hand about three years ago to relieve his right hand, but his left hand is now failing as the other one had done. The difficulty with the left hand is not yet so pronounced as with his right hand. The fingers go into spasm and stretch out stiff. Health and family history both good.

Present condition.—He has stiffness in using his right hand for other actions than keying. He has difficulty in writing, in "punching," and in using the Hughes instrument. He cannot control the right hand; is unable to change a gas mantle; has spasm before shaking hands; in using a knife, grasps the handle tightly; has difficulty in buttoning his waistcoat. While keying a spasm of the right hand is seen; the elbow and shoulder move too much. He manipulates the key by tapping with the little finger. Drinks about 1 pint of malt liquor daily, and smokes about 1½ ounces of tobacco weekly.

Digestive, vascular, and respiratory systems normal. Nervous system: Small man of a somewhat nervous type. Sleeps well; no incoördination, no impairment of sensibility to touch or pain. Myotatic irritability normal. Muscles: Normal development. Electrical reactions normal. By dynamometer, right hand = 162, left hand = 190. Cranial nerves and optic discs normal.

CASE 6.—Female, age 27. Learned telegraphy in the London Telegraph School, and was certified to be a qualified telegraphist at the end of her probation in April, 1901. She stated that she sent in the approved manner and did not grip the key. She first experienced difficulty in keying in 1906 or 1907. She was then employed in a division where there was a great deal of continuous sending. On one occasion she sent as many as 45 or 50 messages in an hour. About six o'clock one day her right hand failed suddenly and she was unable to form letters. She then took to using her left hand to relieve her right hand. About six months later she began to have difficulty in writing also. In December, 1907, her difficulty in writing was brought under notice by the medical officer, and exemption from duties involving continuous writing was given for three months. It was not known

officially that she had any difficulty in sending. In June, 1908, she was understood to have recovered; but she now states that the recovery was not complete, and that she continued to have some little pain and stiffness in her arm. She was then employed in a division where sending and receiving duties were about equal, and where duty at the intercommunication switch afforded relief from sending. In October, 1909, her former difficulty was said no longer to exist. She has since been employed in another division until about a fortnight ago; and she states that the return to a full day's manipulative work (half sending, half receiving) has led to a recurrence of the difficulty. Health and family history good.

Present condition.—Sending now causes pain in the hand and forearm starting from the thumb, and if sending is persisted in it causes tremor. She experiences the pain in other actions besides keying—in writing, in using a needle or a knife and fork.

Digestive, vascular, and respiratory systems normal. Nervous system: No incoördination, no impairment of sensibility to touch or pain. Myotatic irritability normal. Muscles: Normal development. Electrical reactions normal. By dynamometer, right hand = 60, left hand = 75. Cranial nerves and optic discs normal.

THE ROYAL COMMISSION ON HUMAN AND ANIMAL TUBERCULOSIS.

FINAL REPORT: PART II., APPENDIX, VOL. V.[1]

THIS volume, which contains 344 pages of letterpress and 16 coloured plates, deals with comparative histological and bacteriological investigations, and is contributed by Dr. Arthur Eastwood. It is divided into four parts.

General Conclusions.

The first part gives a general account of the results of the investigations. In regard to the mammalian tubercle bacilli Dr. Eastwood has investigated either histologically or culturally, and in the great majority of cases by both methods, the viruses derived from 221 different cases of the spontaneously contracted disease, consisting of 30 obtained from bovines, 130 from human beings, 53 from swine, and 8 from other animals. The bacteriological part deals with the cultural characters of bacilli obtained directly from the original material, and also with those of bacilli recovered after residence in experimental animals, giving a total of 447 strains of bacilli. The histological part deals with the tissues of 777 animals experimentally infected. The bacteriological characteristics of various strains of avian tubercle bacilli and the histological changes produced by these bacilli upon the tissues of birds have also been studied. The general conclusions arrived at are summarised as follows:—

1. Comparing mammalian tubercle bacilli of known human origin with mammalian tubercle bacilli of known origin from spontaneous disease in other animals, I find that in every instance the bacilli of origin from animals other than man are identical culturally, microscopically, and in their effects upon the tissues of experimental animals, with bacilli from certain cases of tuberculosis in the human subject.

2. Referring to the anatomical origins of the human viruses which I have investigated, I call attention to the fact that in all parts of the human body, and in human sputum, collected with due precautions to avoid contamination through food, tubercle bacilli have been found which culturally and in histological effects are identical in every respect with the tubercle bacillus commonly present in the bodies of tuberculous cattle and swine.

3. I have found that many of the viruses of human origin grow with greater cultural luxuriance and produce less histological damage in the organs of certain experimental animals than the bacilli commonly obtained from cattle and swine.

4. In the majority of cases my examinations of the cultures and the animal tissues which I have received at different stages during a protracted series of experiments with the same virus have shown that the original characteristics of the virus were remarkably stable.

5. Hence, to such extent as it may be supposed that such series of experiments are comparable to what takes place in a human body infected with tubercle bacilli, my results support the view that changes in the characteristics of a virus do not readily or rapidly take place in the human body.

6. But I have, in addition, examined certain other viruses which, in respect of the details on which I have reported, hold an intermediate position between the viruses usually obtained from human sources and those of common animal origin.

7. Owing to the existence of these intermediate viruses, I find it impossible to class all the strains of mammalian tubercle bacilli which I have investigated as belonging to one of two stable types.

8. Another significant feature of these intermediate viruses is that they serve to bridge the apparent gap between the viruses on the one hand, which produce acute tissue destruction in the bovine and rabbit, and are of relatively scanty growth on culture media, and those viruses, on the other hand, which produce less tissue damage in the bovine and rabbit and grow more luxuriantly on artificial media.

9. I find that underlying all the mammalian viruses which I have investigated there is an essential unity of characteristics, the differences observed being differences of degree, but not of kind. On artificial culture media they all grow in the same way, though they differ quantitatively in the amount of growth yielded. In the tissues of suitable experimental animals they all produce lesions histologically characteristic of mammalian tuberculosis, though they differ in the intensity of the tissue changes which they set up under similar experimental conditions.

10. Comparing the mammalian with the avian viruses, I find that there are differences not merely of degree but of kind.

11. On appropriate culture media the growth of the avian bacillus can be distinguished without hesitation from the growth of the mammalian bacillus.

12. Comparing the results of similar experiments performed under suitable conditions upon suitable animals, I find that microscopic examination of the tissues unmistakably distinguishes infections due to avian bacilli from infections due to mammalian bacilli

13. It is, however, not possible in the tissues of all animals, under all experimental conditions, to distinguish with certainty under the microscope lesions due to avian bacilli from lesions due to mammalian bacilli. It is sometimes found that in the tissues of mammals the avian bacillus produces tubercles of a chronic type which are indistinguishable from tubercles produced by mammalian bacilli.

Comparative Histology.

The second part deals with comparative histology. Details are given of additional observations upon lesions produced by bovine, human, swine, equine, and other mammalian viruses, and also of those produced by avian viruses upon birds and mammals. The processes of bacterial invasion and dissemination are studied and illustrated by details of cases in different animals. Obstacles to dissemination as developed in local lesions, lymphatic glands and the spleen, bone marrow, blood and lymph channels, and in the tissues are described and illustrated. The progressive escape of bacilli by simple extension, by increased vascularity, by infection of proliferating foci, by breaking-down foci gaining access to the circulation, and by transference of foci from one site to another are all fully discussed and described. The general conditions under which bacilli circulate and grow are outlined. The blood-stream is described as an extremely unfavourable environment for the mammalian tubercle bacillus, and it is stated that whenever the bacilli find themselves in this situation they endeavour to get out of it and generally disappear with a remarkable rapidity. The discovery of bacilli within the blood-stream generally means that active invasion of the circulation from some other source was going on at the time the specimen was obtained or very shortly before, but allowance must be made for the fact that when bacilli become attached to endothelial cells and are carried along in the circulation there may be a longer delay before the bacillus is effectively eliminated from the blood-stream. The distinction between bacilli free in the circulation and those conveyed by cells is clearly brought out.

Dr. Eastwood states that he has only rarely found the multi-nuclear leucocytes conveying bacilli, but that a tubercle bacillus may stick to anything, such as a red corpuscle, a small lymphocyte, or to any other cell and cellular or non-cellular débris which may happen to be in the circulation. Detached endothelial cells are by far the commonest and most important vehicle for conveying bacilli. The reaction of the animal organism to mammalian tubercle bacilli is next considered. The relations of the oxyphile leucocytes, the significance of phagocytosis, the relations of small lymphocytes, endothelial cells, plasma cells, and epithelial cells to mammalian tubercle bacilli are fully described. The remainder of this part is devoted to a detailed description of the experimental lesions produced by avain tubercle bacilli.

Comparative Bacteriology.

Part III. deals with comparative bacteriology. In regard to bovine viruses it is stated that—

Compared with former results the new strains do not exhibit any very important differences. Sometimes, though not invariably, a change in the direction of increased luxuriance has been observed after residence in the tissues of a dog. The results on birds taken as a whole show very little evidence of modification, though in some instances the cultures recovered from birds have grown rather better than previously. Their characters have always remained in strict conformity to the mammalian type.

In regard to human viruses, 109 strains belonging to

[1] Vols. I. and II. of the Appendix were dealt with in THE LANCET, Sept. 23rd, 1911, p. 904.

44 new viruses have been investigated, and in addition cultures isolated from the sputum by Dr. A. S. Griffith. These various strains are referred to the five grades of bacilli.[2] Fifty-eight swine viruses were studied, of which 51 were found to be identical culturally with ordinary bovine viruses, and are classed in one or other of Grades I., II., III. Two other strains were classified in other grades; the remaining five presented the typical characters of the avian tubercle bacillus.

The further results with equine viruses are thus summarised:—

These five equine viruses resembled in cultural growths the ordinary bacillus isolated from the bovine. The first three grew very badly in early generations, presenting more difficulty in this respect than even very poorly growing bovine viruses; but after prolonged subculture they showed marked improvement, though not surpassing the maximum luxuriance of Grade III. Strains passed through other species of animals, including the fowl, showed no important changes in cultural characters.

An investigation of the cultural characters of viruses isolated from other mammals spontaneously affected gave the following results:—

The virus from the cat grew fairly well, but not better than some bovine viruses. The virus from the antelope grew as well as many slightly virulent human viruses; and the virus from the gnu was extremely luxuriant in its growth.

The results of the investigation of the cultural character of bacilli isolated from birds are summarised as follows:—

All the cultures raised from original avian material were practically identical, presenting in common the characteristics of very poor growth on pure serum; copious growth on glycerinated serum; refusal to spread from a sloping surface of glycerinated serum on to the surface of broth, but the formation of powdery growth at the bottom of the broth; copious, pale, slimy growth on glycerin-agar; abundant, pigmented growth on potato; in films examined microscopically, a free separation of the bacilli (to be contrasted with the glueing together of mammalian bacilli), a marked prevalence of very short forms in some cultures, and a marked pleomorphism, with not infrequent branching, in others. Four strains, recovered after residence of the bacilli in mammals, presented the mammalian characters of Grades II. and III.

Mammalian and Avian Viruses.

The fourth part gives a comparison of mammalian with avian viruses. In each case the culture and microscopical characters of the organisms and the tissue changes resulting from their action in the body of various animals are reviewed. This section contains a great deal of interesting information in regard to the histology and bacteriology of tuberculosis in mammals and birds. For details in regard to the latter we must refer our readers to the original report, but the following summary of the processes in mammalian tuberculosis is of considerable interest and importance:—

The first step in tubercle formation is the penetration of an endothelial surface by a tubercle bacillus. Changes then occur in the endothelial cell. Its protoplasm becomes swollen; the nucleus stains more deeply, allows some escape of chromatin into the protoplasm, and shows a tendency to multiply by direct division. These changes vary in amount according to the degree of local irritation which the individual cell experiences. The fixed tissue cells upon which the endothelial cells rest are also affected; their protoplasm fuses with that of the adjacent endothelial cells and is occupied by bacilli, whilst their nuclei assume irregular shapes and often multiply by direct division. There is then a progressive loss of cellular individuality. The focus which the bacilli have penetrated becomes a protoplasmic matrix containing nuclei; it no longer behaves like a collection of discrete cells, and it never subsequently returns to that condition. The nuclei may, for a time, continue to multiply by direct division, but the protoplasmic matrix never becomes differentiated into a structure composed of individual cells; its usual fate is to caseate.

These are the changes which have appeared to me typical of tubercle formation. They are accompanied by accessory changes due to irritant or inflammatory effects. The first and most noticeable of these secondary effects is the attraction of finely granular oxyphil leucocytes to the site of injury. These cells invariably break down when they come into close proximity to tubercle bacilli, and their disintegrated remains form a large constituent of the caseous element in the tubercle. How far they perform a useful function is less clear. It is at all events certain in the tissues I have examined that the degree of resistance offered by the animal organism is in no way proportionate to the amount of leucocytosis. The leucocytes are attracted just as copiously to the acutely progressive lesions as they are to lesions of a less severe character. There is, however, a difference in the result. The leucocytes which make their way into a chronic lesion preserve their integrity for a much longer period than those which have been attracted to an acute lesion.

The small lymphocyte is also constantly found at the margin of lesions in all stages of infection. This cell is never able to retain its vitality in situations where active disease is going on, but it accumulates in large numbers at the periphery of the more chronic tubercles, and generally fills up the interior of lesions which have become completely quiescent, no longer contain bacilli and have not advanced to caseation.

Then there is a further series of accessory changes which appear due to the local irritant action of the tubercle upon the surrounding tissue and consist of the reactions of this tissue in the directions of inflammation and repair. The characteristic features of the inflammatory stage are the swelling-up of the endothelial and connective-tissue elements and a stimulus to the local production of large mononuclear, wandering cells (plasma cells) which arise from cells normally present in the adjacent connective tissue, assume a spherical form, multiply by indirect division, and migrate towards the inflamed area. The stage of repair, or attempted repair, is characterised by the formation of new endothelium and new fibrous tissue. The new endothelium, arising from pre-existing endothelial and connective tissue elements, grows partly in the form of capillary tubes and partly as a flattened layer which forms a lining to the spaces arising in the newly formed tissue. The new fibrous tissue is produced from the plasma cells, endothelial cells, and connective tissue cells, and forms a zone at the periphery of the inflamed area.

The above description appears to me to contain all the essential features of tubercle formation. Without introducing the terms "epithelioid cells" and "giant cell" it contains the histological facts which are commonly designated by these terms. It is often convenient for merely descriptive purposes to use the term "giant cell" as a brief designation of a continuous mass of protoplasm containing many nuclei, and I see no harm in using "epithelioid" as a convenient designation for any group of cells which bears some resemblance to epithelium in that it is a continuous layer composed of cells with a large amount of protoplasm, and each with a more or less spherical nucleus. The danger in the use of these terms is, it appears to me, that it often implies acceptance of erroneous theories. The "giant cell," I find, has neither independence nor any other characteristic of individuality, but is merely a degeneration product. It seems particularly absurd to call it a "macrophage" since it is perfectly helpless, absolutely non-motile, and forms one of the commonest sites in which the tubercle bacillus survives and grows. It is, I think, equally erroneous to assume that the tubercle bacillus is endowed with the capacity of producing, in some mysterious way, a new sort of cell with peculiar "epithelioid" characteristics. I find no mystery about those cells in a tubercle which "look like epithelium." Some of them simply are original epithelium with damaged and, in consequence, badly staining protoplasm. In other cases they are new formations; they then consist of endothelium which has grown as a covering over the walls of newly formed tissue spaces.

The pathogenic peculiarities of the mammalian tubercle bacilli which I have investigated consist in (1) their slowly toxic action upon cell protoplasm; and (2) their irritant action upon cell nuclei. (1) Leads to caseous degeneration, a process for which the products of disintegrated bacilli are probably to a large extent responsible; (2) leads to the splitting up of the nuclei by direct division, a process which may continue as long as the nuclei are able to derive any nutriment from the damaged protoplasm.

The coloured plates are admirable reproductions of the appearances of bacteria, and of the histological appearances of tissues infected with tubercle stained by various methods.

[2] THE LANCET, Feb. 9th, 1907, p. 380.

MEDICINE AND THE LAW.

Disease and Compensation for "Accidents."

IN the case of Martin *v.* the Corporation of Manchester, the corporation, the employers of a workman, appealed against an award of the judge of the Lancaster county court, sitting at Manchester as arbitrator under the Workmen's Compensation Act, 1906.[1] The applicant for compensation was employed as porter in the Monsall Scarlet Fever Hospital, Manchester, which is under the control of the corporation. In February, 1911, he had an attack of influenza; he returned to his work on March 22nd, and on April 1st cleaned out the mortuary for the first time since his return, being also employed on that day in the scarlet fever wards. On April 5th he was found to be ill with scarlet fever, and as the result he suffered from nephritis, being at the time of the award unquestionably incapacitated from work, so that the question for the county court judge had been whether the disease was an accident arising out of, and in the course of, his employment. It may be explained that the evidence, beyond establishing the facts stated above, did not prove that infectious conditions prevailed in the mortuary, but apparently the applicant was able to state that bodies of persons who had died from scarlet fever might have lain there shortly before he cleaned it out, and there was no evidence that they had not or that it would have been unusual for them to have done so, or that if they had done so disinfection had taken place afterwards. The county court judge found as a fact that the applicant contracted scarlet fever in the mortuary, and held that it constituted an injury by accident within the meaning of the Act. The principal judgment in the Court of Appeal, in which Lords Justices Fletcher Moulton and Buckley concurred, was delivered by the Master of the Rolls, allowing the appeal and annulling the award of the county court judge on the ground that there was no evidence to support the finding that the infection was an accident, arising out of, and in the course of, the workman's employment. His lordship pointed out that the award could not be upheld without implying that whenever a nurse or attendant at

[1] See THE LANCET, August 12th, 1911, p. 475.

a hospital where there was infectious disease contracted such a disease it was an injury by accident entitling him or her to compensation. The Act related to personal injury by accident and it did not follow that every injury arising in the course of the employment was an accident. The principles to be followed were contained in two cases, Broderick *v.* The London County Council (1908, 2 K.B., 807) and Eke *v.* Hart Dyke (1910, 2 K.B., 677), and in accordance with those decisions a workman could not recover unless he could prove the particular time, place, and circumstances in which the alleged "accident" occurred. In the first case mentioned, which was followed in the second, a man engaged on sewer work contracted enteritis, and the Court of Appeal decided against his claim for compensation because there was no evidence as to when, where, or how he actually became infected. Enteritis was not an industrial disease which by the Act would entitle the workman to compensation on proof that being employed in a certain industry he had contracted it. In the case under consideration, his lordship pointed out, the county court judge had decided that the applicant had been infected through cleaning out the mortuary, but although this might be a likely way for him to acquire the disease, or even the most likely way in which he might have done so, there was no evidence pointing to that conclusion. The applicant had been in the mortuary on a certain day and on the same day he had been in certain wards of the hospital; also in the course of the period during which his infection must have taken place he had been outside the hospital half a dozen times. There was no proof of any infectious condition in the mortuary, such as the presence of the dead body of someone who had died from scarlet fever, and he (the Master of the Rolls) could not see that there was any reasonable evidence that the disease attacked the applicant on the one day, April 1st, when he cleaned out the mortuary; indeed, it seemed to him extravagantly unlikely. His lordship accordingly held that there was nothing to justify the finding of the county court judge that there was a particular time and place at which the disease was contracted. He referred further to the serious consequences which would arise for hospital authorities if they were to be held liable for any disease contracted by the members of the hospital staff in the course of their duties.

In comment it may be said that the case is of importance as applying to a hospital principles already well known from previous decisions which it hardly seems to amplify or strengthen. The best way to appreciate those principles is to remember that, in litigation at common law, to obtain compensation for accidents on the ground of negligence it has always been the policy of the law to insist upon the occurrence of accident being traced directly by evidence to an act or omission of the defendant or his servants. It has not been enough to prove that there has been an accident, and that there has been negligence which might have caused it or even probably did cause it. There must be evidence connecting the cause with the effect, the negligence with the accident. The reference of the Master of the Rolls to industrial diseases rendered the subject of compensation by the Act in question is also important. There are certain diseases dangerous to persons employed in certain classes of employment, and these are specified, and so placed on a different footing from others. Other diseases have been held to rank as accidents, although before the Workmen's Compensation Acts of recent years were passed no one would have dreamt of applying such a term to them. These are subject to the same law as accidents—i.e., there must be evidence of when, where, and how the accident occurred; failing this it is not proved to have arisen out of, and in the course of, the employment.

The Shops Act, 1911.

"An Act to amend and extend the Shops Regulation Acts, 1892 to 1904," is the longer official description of a recently passed Act of Parliament which is to come into force on May 1st throughout the British Islands, with certain modifications of an administrative character for Scotland, and more elaborate differences with regard to Ireland. It has no preamble, so its principal object must be gathered from its contents, and would appear to be the securing for all shop assistants a weekly half-holiday, a most welcome boon, no doubt, to those not already enjoying one, and an opportunity for the enjoyment of air and exercise which will be conducive to improved health and fitness for work. The manner in which the end is to be obtained is two-fold. By the first section "on at least one weekday in each week a shop assistant shall not be employed about the business of a shop after 1 o'clock in the afternoon." This appears to be of universal application. By Section II., "Every shop shall, save as otherwise provided by this Act, be closed for the serving of customers not later than 1 o'clock in the afternoon on one weekday in every week." This would seem to be directed against those competitors in trade who, by keeping open their shops all day and every day, prevent the universal or general voluntary adoption of a weekly half-holiday, which is obviously a desirable thing for the employed, even if the employer may fear that it will diminish his weekly sales. That the object of this section is to coerce a minority and not to control unduly the majority in a particular trade is made evident by a proviso which follows to the effect that the local authority is to be compelled to make an order exempting shops of a particular class in any area from the obligation to comply with this section, if satisfied that a majority of them are in favour of being so exempted. Certain trades or businesses are also to be found enumerated in Schedule II. as being exempted from the provisions of this Act as to the weekly half-holiday—i.e., from the provisions of Section II. as to the closing of whole shops on one day in the week. These exempted trades include the sale of medicines and medical and surgical appliances; the sale of intoxicating liquors and of refreshments, the law apparently not regarding intoxicating liquors as "refreshments"; the sale of motor, cycle, and air craft supplies and accessories to travellers, which suggests the questions whether a medical practitioner on his rounds is a traveller, and at what distance from his home he may become one; the sale of newspapers and periodicals; and the business carried on at a railway bookstall on or adjoining a railway platform. This last-mentioned exemption strikes one as likely to imply an appreciable degree of hardship upon some booksellers, and, indeed, we understand that in the City, where a large trade in books is done after 1 P.M. on Saturday afternoon, there is a movement among booksellers directed towards securing exemption from compulsory weekly closing for their trade in that area. Other trades exempted by this schedule and not already mentioned are those dealing with perishable foodstuffs, with tobacco and smokers' requisites, and retail trade carried on at an exhibition if ancillary only to the main purpose of the exhibition, which suggests the difficulty which might arise in connexion with such exhibitions as those held at Earl's Court, and even with regard to the Royal Academy. At another point in the Act, besides the schedule above referred to, the danger of interfering with the sale of goods for the benefit of the sick is considered—that is to say, under Section 8 the occupier of a shop is not to be held guilty of an offence against the Act if, when a customer has been served after the weekly half-holiday has commenced, there has been reasonable ground for believing that the article supplied was required in the case of illness. The expression "shop" is defined as including any premises where any retail trade or business is carried on, and there are provisions as to meal times and other matters to which we do not refer. Altogether the Act, which is to be administered by the local authority, may be described as likely to be accepted with satisfaction by many who carry on business as employers as well as by those whom they employ. Some of its provisions are likely to cause a little difficulty or friction at first, and others do not express their meaning as clearly as an Act of Parliament intended for the immediate benefit of a large class of laymen should do, but it is a benevolently conceived experiment, and one whose effect on the health of those concerned will be watched with some interest.

CLUB APPOINTMENTS IN GERMANY.—The German medical papers publish lists of appointments to clubs and other institutions which are vacant but which medical men are advised not to accept without previously ascertaining from the secretary of the German Medical Association the true circumstances of the vacancy. These lists appear to be growing in length. The last one consisted of no less than 102 appointments.

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

The Safeguarding of the London Milk-supply.

THE Public Health Committee reported to the London County Council on April 2nd its conclusions after consideration of the final report of the Royal Commission appointed to inquire into the relations of human and animal tuberculosis. The committee stated that it was of opinion that further legislation was urgently required in order to deal effectively with the milk-supply of London.

In the course of an exhaustive report on the whole subject the committee recalled the circumstances which led to the appointment of the Royal Commission on the relations of human and animal tuberculosis, and the active agitation in the milk and meat trades for relaxation of restrictions following upon the statement of the late Professor Koch that he had been unable to induce general disease, or anything more than slight local trouble, in bovine animals by inoculating them with bacilli derived from the human subject, from which he inferred that human beings would be at least equally resistant to bacilli from a bovine source. The Royal Commission, on the other hand, arrived at the conclusion that "man must be added to the list of animals notably susceptible to bovine tubercle bacilli," that "human tuberculosis is in part identical with bovine tuberculosis," and that "a considerable amount of the tuberculosis of childhood is to be ascribed to infection with bacilli of the bovine type transmitted through the milk of the cow."

The general conclusions of the Royal Commission, stated the Public Health Committee, as to the frequency with which infected milk found its way to the public, made it apparent that it was the paramount duty of the Council to make further attempts to ensure a pure milk-supply for London. In 1909 more than 10,000 deaths from tuberculosis (other than pulmonary tuberculosis) occurred in England and Wales in children under the age of 15. Of this number, 2806 deaths which took place in children under the age of 5 were attributed to tuberculosis of the digestive system. Having regard to these facts, and putting aside the danger from diseases other than tuberculosis, which did undoubtedly from time to time infect an inadequately supervised milk-supply, the committee felt that although an impure milk-supply was only one of various possible and probable sources of tuberculosis, nevertheless it was the duty of public authorities to try to remove any and every cause where possible, and that the eradication of tuberculosis in cattle must be regarded as a public health measure of considerable importance to man.

The necessity for legislation to deal with dirty milk was generally appreciated. The National Conference on Infant Mortality which met in June, 1906, the report of the Inter-Departmental Committee on Physical Deterioration, both drew attention to the question. Examination of samples made for the Council by the Lister Institute showed that a large proportion gave evidence of undesirable methods of production and handling. Samples of milk containing dung had not been uncommonly noted by the inspectors in the course of their routine work of collecting samples at railway stations. On more than one occasion, also, samples had been observed to be of a pinkish tint, due to the admixture of blood. Parliamentary action was necessary to arm local authorities with requisite and uniform powers. The powers of public authorities to deal with milk in London at present consisted of the following:—

The London County Council.—Power to license cowhouses annually (Section 20 of the Public Health (London) Act, 1891.) Power to secure proper conditions in cowsheds and dairies and the sanitary condition of milkshops. Power to forbid the use for human food of milk from a diseased cow, or one having tubercular disease of the udder. (The Dairies, Cowsheds and Milkshops Orders of 1885, 1886, and 1899, applicable also throughout the country.) Power to seize and slaughter on payment of compensation any cow in a London cowshed suspected of tuberculosis of the udder. (Part V. of the L.C.C. (General Powers) Act, 1904.) Power to take within and outside the county samples of milk coming into London; to examine suspected cows outside London and to prohibit the sending of further supplies from an infected source. (Part IV. of the L.C.C. (General Powers) Act, 1907.)

The Metropolitan Borough Councils.—Power of registration of dairymen, the enforcement of the various dairies, &c., orders; power to prohibit supplies from any infected dairy within the county, to prohibit a person suffering from an infectious disease from milking any animal, to seize any article unfit for human consumption, to refuse to register persons carrying on dairies in unsuitable premises, power of enforcement of sanitary regulations made by the County Council, and powers under the Sale of Food and Drugs Act.

The Local Government Board.—May make regulations relating to the importation of any article of food unfit for human consumption. The Board has issued regulations, which come into force in June, 1912, prohibiting the use of preservatives in milk and cream.

Since the London County Council General Powers Act, 1907, came into operation the bacteriological examination of 7896 samples of milk of country origin had been completed, 850 (10·8 per cent.) proving tuberculous; 44,307 cows at 1622 farms without the county had been examined, and 574, or 1·3 per cent., of the animals proved to be affected with tuberculosis of the udder. It was to be remarked, therefore, that whereas 10·8 per cent. of the milk examined was found to be tuberculous, only 1·3 per cent. of the cows were traced as being tuberculous. The disparity in the percentages was largely accounted for by the fact that milk from various cows was blended in the same railway churn, but, nevertheless, it appeared that more tuberculous animals existed than could be traced under present conditions. The Council had power to prevent the sale within the county of milk from cows ascertained to be suffering from tuberculosis of the udder only. It was most desirable that this power should be extended to include all cows suffering from tuberculosis with emaciation, or giving tuberculous milk, and the Council had already urged this upon Parliament. Moreover, although the Council could exclude from London milk from a farm without the county, which on examination was proved to be tuberculous, it had no power to require the slaughter or prevent the removal of the animal giving such milk. Consequently, if the animal was moved all trace of it might be lost, and its milk would be sold for human consumption until again detected. Further, the Council had no powers to deal with milk which, on examination, was deemed to be so filthy as to be unfit for human food.

The Public Health Committee recapitulated the attempts, familiar to readers of THE LANCET, made by the Council to obtain from Parliament the extensions of its powers suggested above to enable it to deal with the urgent problem of the milk-supply. Since 1907 proposals by the Council had been withdrawn or rejected in favour of a plan for dealing with the question on national lines. Pressure of other business, however, has led to the continual postponement of a Government measure. The committee expressed its agreement with the principle of a settlement of the question on national lines; the proposals made by the Council were necessarily limited in extent, and general legislation was more desirable. To deal in an effective and uniform manner with the question as affecting the whole country legislation was required in one *consolidating* Act. In the opinion of the committee the following points, *inter alia*, appeared to require the consideration of Parliament.

1. To make it possible to deal with a cow suffering from any form of tuberculosis, and to prohibit the sale of its milk.
2. Further powers of supervision of buildings where cows are kept or milk exposed for sale.
3. Power to take samples in any place from the time the milk leaves the cow to the time it reaches the consumer.
4. Adequate penalties to deter from wilful breaches of the law.
5. The more complete supervision of the import trade, with a view to providing that imported milk, equally with home-produced milk, shall be subject to proper control.

The Public Health Committee advised that a deputation should wait upon the President of the Local Government Board to urge the importance of effective general legislation with regard to the milk-supply being speedily promoted. Failing such general legislation, however, the Government should be urged to assist the Council in its efforts to safeguard London's milk-supply, notwithstanding the fact that general legislation would be more satisfactory. In the unfortunate event of the Council having to renew its own local efforts it should seek to obtain powers as follows:—

1. To extend the provisions of Part IV. of the L.C.C. (General Powers) Act, 1904, to any cow suffering from any form of tuberculosis, with emaciation, or giving tuberculous milk, and to the milk of any such cow.
2. Any necessary additional powers to take samples anywhere within the county of milk and milk products in transit and in wholesale and retail establishments, and in the event of such milk being found to be adulterated or unfit for human food to proceed for penalties.
3. Powers for the Council to make orders prohibiting the supply of milk into the county from the dairies or depôts without the county from which such impure milk was obtained.
4. Such additional powers (if any) as were necessary to enable sanitary authorities to take samples, other than on railway premises, and to proceed for penalties.
5. Powers to enable the Council, at its discretion, to pay expenses of

any dairyman appearing before it to show cause why an order should not be made requiring him not to supply milk from specified animals.

6. For the application within the county of Section 53 of the Public Health Acts (Amendment) Act, 1907, which provides that, if the medical officer certifies to the local authority that any person is suffering from infectious disease which the medical officer has reason to think is attributable to the milk-supply within the district, the local authority may require the dairyman to furnish a complete list of all the farms, dairies, or places from which his supply of milk has been derived during the last six weeks.

The Council decided to appoint a deputation to wait upon the President of the Local Government Board and bring to his notice the considerations urged by the Public Health Committee.

Dental Treatment of School Children.

The recommendation of the Education Committee, reported in the last issue of THE LANCET, p. 933, that offers be accepted from the St. Marylebone General Dispensary and a local committee at Fulham to provide dental treatment for school children of 6, 7, and 8 years of age, and in special cases of children of other ages, came before the Council at the same meeting. It was proposed to appoint an organiser at a salary of £100 a year in connexion with the two centres.

The Finance Committee, in a report to the Council on the subject, remarked that in previous dental schemes no mention had been made of the necessity for the appointment of additional organisers, although the Finance Committee was informed that this was now the usual practice. Under a comprehensive scheme of medical and dental treatment for elementary school children the number of paid organisers would be considerable, and their cost obviously must be taken into account when considering the cost of treatment. It appeared that the average cost to the Council of dental treatment, calculated on the number of children who actually obtained treatment during the last quarter, was 6*s*. 2*d*. a case, and that the cost per case of the new schemes now put forward was estimated at the same figure assuming an attendance of the full number of children contemplated. Experience had shown, however, that the number who actually attended was less than the number arranged for. If the cost of the organising staff be added the cost per case in the present instance would be increased by 9*d*., making the total 6*s*. 11*d*. per case. This was exclusive of central administrative charges.

In the course of a brief discussion a proposal was made that the schemes be not limited to children of 6, 7, and 8 years of age on the ground that treatment would be more valuable at a later age when the children had their permanent teeth. The chairman of the Education Committee, Mr. COBB, explained that the ages proposed had been selected in accordance with expert advice. When children's temporary teeth got into a bad condition the permanent teeth were injured before the temporary ones were displaced.

The recommendations of the committee were adopted.

BRITISH MEDICAL BENEVOLENT FUND.

AT the March meeting of the committee 30 cases were considered and grants amounting to £308 made to 27 of the applicants. Appended is an abstract of the cases relieved:—

Daughter, aged 59, of M.D. Lond. Used to maintain herself as a cook, but for the last two years has been incapacitated by a nervous complaint, and is now practically bedridden. Only income a few shillings a week derived from a small cottage, which is mortgaged. Relieved three times, £26. Voted £18.

Widow, aged 46, of M.R.C.S. No income, and children only just beginning to be self-supporting. Is receiving assistance from this Fund, but asks for a little extra help to meet unavoidable expenses. Voted £3.

Widow, aged 56, of M.R.C.S. No children; no income, and unable to maintain herself on account of permanent ill-health. Relieved eight times, £32. Voted £12.

M.B., C.M. Edin., aged 52. Used to have a fair practice in the North of England, but lost it during a long illness and is now quite incapacitated by paralysis. No income and entirely dependent on wife's earnings as a masseuse. Voted £18.

Widow, aged 38, of L.R.C.P., L.R.C.S. Irel. Quite unprovided for at husband's recent death from new growth and has been unable to sell the practice. Two children, aged 7 and 6. Voted £10.

Daughter, aged 39, of late M.R.C.S. Is promised a year's training for rescue work with the prospect of a good salary afterwards but requires help for personal expenses meanwhile. Voted £20.

Widow, aged 61, of L.R.C.P., L.R.C.S. Edin. Only income £15 a year and suffers from a chronic complaint. Voted £10.

Daughter, aged 48, of late M.R.C.S. No income and unable to support herself because she is obliged to nurse an invalid mother, aged 90, whose income is insufficient for the two. Voted £10.

Daughter, aged 53, of L.R.C.P. Edin. Lives with her mother, who is paralysed and practically dependent on an old age pension of 5*s*. a week. Voted £12.

Daughter, aged 55, of late M.R.C.S. Dependent on a small weekly allowance from a widowed sister, and has been a chronic invalid for many years, during which regular employment has been quite impossible. Relieved 14 times, £161. Voted £12.

Widow, aged 42, of M.B., C.M. Edin. Practically unprovided for at husband's death, and endeavours to support herself and four children by taking boarders. Relieved once, £10. Voted £10.

Widow, aged 38, of M.R.C.S. Has been bedridden for nearly 12 years, and only sources of income an annuity of £25 and an old age pension of 5*s*. a week. Relieved five times, £44. Voted £17.

L.R.C.P., L.R.C.S. Edin., aged 60. Has been totally incapacitated for four years and is consequently practically dependent on two unmarried sisters who have had to give up a school in order to nurse him. Relieved twice, £20. Voted £10.

Wife, aged 46, of L.R.C.P., L.R.C.S. Edin. Since husband's removal to a County Asylum five years ago has endeavoured to support herself by letting lodgings but finds it most difficult to do so. Relieved twice, £30. Voted £15.

Daughter, aged 60, of late M.D. Used to be a governess, but has been unable to work since a serious illness some years ago and is dependent on a sister whose means are very small. Relieved six times, £90. Voted £5.

Widow, aged 54, of M.D. Edin. Unprovided for at husband's death about seven years ago, and children only able to give very slight assistance. Relieved six times, £64. Voted £12.

Daughter, aged 63, of late M.R.C.S. Endeavours to support herself by taking boarders, and, with the help of friends and this Fund, just succeeds in making both ends meet. Relieved five times, £62. Voted £10.

Widow, aged 66, of M.R.C.S. No income; health indifferent and nearly blind. Relieved once, £12. Voted £12.

Widow, aged 67, of L.R.C.P., L.R.C.S. Edin. Only income a small pension from a charitable society, and is a chronic invalid. Relieved twice, £24. Voted £5.

Daughter, aged 61, of late M.R.C.S. Receives a few shillings a week from friends, and is quite incapable of supporting herself owing to a chronic and incurable affliction. Relieved four times, £42. Voted £12.

Widow, aged 46, of L.R.C.P., L.R.C.S. Edin. Has been in very bad health for several years, and is dependent on the help given by this Fund and another charitable society. Children unable to help. Relieved 16 times, £184. Voted £12.

Widow, aged 54, of L.R.C.P., L.R.C.S. Edin. No income; no children; health very feeble, and occupation consequently almost impossible. Relieved eight times, £32. Voted £12.

Widow, aged 67, of M.D. Glasg. Health so feeble as to necessitate daughter's presence at home; a son earning a small weekly wage supplements the help given by this Fund and another society. Relieved 12 times, £136. Voted £12.

Widow, aged 50, of M.B. Durh. For many years supported herself, a mother, and two daughters, by a nursing home, but is now in bad health, and dependent on a relation. Relieved three times, £29. Voted £5.

M.R.C.S., aged 74. Used to have a good practice in a London suburb, but broke down in health, and now receives an old age pension of 5*s*. a week. Relieved once, £12. Voted £12.

Daughter, aged 44, of late M.R.C.S. Used to be a district nurse, but had to undergo a severe operation, and now endeavours to maintain herself by letting rooms. Relieved once, £10. Voted £10.

M.R.C.S., aged 65. Was a fairly successful practitioner, but has had bad health for several years, and has consequently exhausted his means. Is at present incapacitated by the sequelæ of an acute illness. Relieved once, £12. Voted £12.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

VITAL STATISTICS

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns, having an estimated population of 17,559,219 persons in the middle of this year, 9056 births and 4920 deaths were registered during the week ending March 30th. The annual rate of mortality in these towns, which had been 14·4, 14·6, and 14·1 per 1000 in the three preceding weeks, rose to 14·6 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual death-rate in these large towns averaged 16·2 per 1000, while in London during the same period the average annual death-rate did not exceed 15·3 per 1000. The annual death-rates in the several towns during the week under notice ranged from 5·5 in Wimbledon, 6·4 in Ealing, 7·8 in Eastbourne and in Southend-on-Sea, and 8·1 in Croydon, to 20·4 in Manchester and in Gateshead, 20·7 in Oldham, 21·2 in St. Helens, 21·3 in Bootle, and 21·7 in Burnley.

The 4920 deaths from all causes were 164 in excess of the number in the preceding week, and included 405 from the principal epidemic diseases, against 434 and 425 in the two previous weeks. These 405 deaths from the principal epidemic diseases included 147 from whooping-cough, 119 from measles, 56 from diphtheria, 54 from infantile diarrhœal diseases, 17 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual

death-rate from these diseases did not exceed 1·2 per 1000, against 1·3 in each of the two preceding weeks. The deaths attributed to whooping-cough, which had been 136, 159, and 155 in the three preceding weeks, slightly fell to 147, and caused the highest annual death-rates of 1·1 in Birmingham, in St. Helens, and in Sheffield, 1·3 in Merthyr Tydfil, 1·4 in Smethwick and in Manchester, 1·5 in West Bromwich, and 1·8 in Swansea. The deaths referred to measles, which had increased from 101 to 138 in the three preceding weeks, declined to 119 in the week under notice; the highest annual death-rates from this disease were 1·9 in Manchester, 2·0 in Salford, 2·1 in Oldham, 2·5 in Cardiff, 2·9 in Oxford, and 3·0 in Wakefield. The fatal cases of diphtheria, which had been 49, 55, and 35 in the three preceding weeks, rose to 56 in the week under notice, and included 17 in London and its suburban districts, 5 in Portsmouth, 4 in Stoke-on-Trent, and 3 in Liverpool. The deaths of infants under 2 years of age attributed to diarrhœal diseases, which had steadily increased from 39 to 69 in the five preceding weeks, declined to 54 in the week under notice, 24 of which number were registered in London and its 14 suburban districts, 3 in Liverpool, and 3 in Sheffield. The deaths referred to scarlet fever, which had been 25, 13, and 17 in the three preceding weeks, were again 17 in the week under notice, and included 2 each in Stoke-on-Trent, Birmingham, Nottingham, Rotherham, and Newcastle-on-Tyne. The fatal cases of enteric fever, which had declined from 20 to 11 in the four preceding weeks, were 12 in the week under notice, of which number 2 were recorded in Salford and 2 in Cardiff.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 1357, 1384, and 1368 at the end of the three preceding weeks, had declined to 1321 on March 30th; 133 new cases of this disease were admitted to these institutions during the week, against 161, 152, and 137 in the three preceding weeks. These hospitals also contained on March 30th 1051 cases of diphtheria, 522 of whooping-cough, 218 of measles, 52 of enteric fever, and 2 of small-pox. The 1172 deaths from all causes recorded in London were 4 in excess of the number in the previous week, and were equal to an annual death-rate of 13·5 per 1000. The deaths referred to diseases of the respiratory system, which had been 259, 224, and 246 in the three preceding weeks, declined to 191 in the week under notice, and were no fewer than 132 below the number registered in the corresponding week of last year.

Of the 4920 deaths from all causes in the 94 large towns 179 resulted from different forms of violence, and 405 were the subject of coroners' inquests. The causes of 34, or 0·7 per cent., of the deaths registered in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in 13 of its 14 suburban districts, in Sheffield, Leeds, Bristol, Bradford, Newcastle-on-Tyne, Salford, and in 53 other smaller towns. The 34 uncertified causes of death included 6 in Birmingham, 4 in Liverpool, and 2 in each of the following towns: St. Helens, Manchester, Burnley, Darlington, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, having an estimated population of 2,182,400 persons in the middle of this year, 1122 births and 709 deaths were registered during the week ending March 30th. The annual rate of mortality in these towns, which had been 15·4 and 17·4 per 1000 in the two preceding weeks, declined to 17·0 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual rate of mortality in these towns averaged 18·4 per 1000, and was 2·2 per 1000 above the mean rate recorded during the same period in the 94 large English towns. The annual death-rates in the several Scotch towns in the week under notice ranged from 8·7 in Perth, 10·6 in Partick, and 12·2 in Falkirk, to 21·4 in Paisley, 23·3 in Kirkcaldy, and 25·4 in Greenock.

The 709 deaths from all causes were 17 fewer than the number in the previous week, and included 87 which were referred to the principal epidemic diseases, against numbers rising from 76 to 95 in the three preceding weeks. Of these 87 deaths, 48 resulted from measles, 16 from infantile diarrhœal diseases, 12 from whooping-cough, 7 from scarlet fever, 3 from diphtheria, and 1 from enteric fever, but not one from small-pox. These 87 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·1 per 1000, or 0·9 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had increased from 39 to 50 in the three preceding weeks, slightly fell to 48, and included 27 in Glasgow, 6 in Leith, 5 in Paisley, and 4 in Edinburgh. The deaths of infants under two years of age from diarrhœal diseases, which had increased from 5 to 16 in the four preceding weeks, were again 16 in the week under notice; 7 deaths were registered in Glasgow, 3 in Edinburgh, and 2 in Aberdeen. The fatal cases of whooping-cough, which had been 6 and 13 in the two preceding weeks, were 12 in the week under notice, and included 4 in Glasgow, 2 in Edinburgh, and 2 in Aberdeen. The deaths attributed to scarlet fever, which had decreased from 10 to 5 in the three preceding weeks, slightly rose to 7, and included 3 in Glasgow and 2 in Aberdeen. The deaths referred to diphtheria, which had been 8 and 9 in the two preceding weeks, declined to 3, and comprised 2 in Glasgow and 1 in Aberdeen. The fatal case of enteric fever was registered in Kirkcaldy.

The deaths referred to diseases of the respiratory system, which had been 136, 98, and 107 in the three preceding weeks, rose to 123 in the week under notice. The deaths from the several forms of violence numbered 34, against numbers decreasing from 29 to 18 in the three preceding weeks.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 636 births and 521 deaths were registered during the week ending March 30th. The annual rate of mortality in these towns, which had been 24·7 and 20·7 per 1000 in the two preceding weeks, rose to 23·5 per 1000 in the week under notice. During the 13 weeks of the first quarter of this year the mean annual death-rate in these Irish towns averaged 23·4 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 16·2 per 1000, while in the 18 Scotch towns it was equal to 18·4 per 1000. The annual death-rates in the several Irish towns during the week were equal to 28·6 in Dublin (against 13·5 in London), 19·3 in Belfast, 32·7 in Cork, 24·2 in Londonderry, 21·7 in Limerick, and 20·9 in Waterford; in the remaining 16 of these Irish towns the mean annual death-rate did not exceed 17·5 per 1000.

The 521 deaths from all causes in the 22 Irish towns were 61 in excess of the number in the previous week, and included 38 which were referred to the principal epidemic diseases, against numbers decreasing from 41 to 25 in the three previous weeks; of these 38 deaths, 16 resulted from whooping-cough, 7 from measles, 7 from infantile diarrhœal diseases, 6 from diphtheria, 1 from scarlet fever, and 1 from typhus, but not one from enteric fever or from small-pox. These 38 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·7 per 1000; the death-rate from these diseases in the same week did not exceed 1·2 per 1000 in the 94 large English towns, while in the 18 Scotch towns it was equal to 2·1. The deaths attributed to whooping-cough, which had been 13, 16, and 4 in the three preceding weeks, rose to 16, and included 10 in Belfast, 2 in Dublin, and 2 in Londonderry. The deaths of infants under two years of age from diarrhœal diseases, which had declined from 13 to 6 in the three preceding weeks, were 7 in the week under notice, of which 2 were registered in Belfast and 2 in Cork. The 7 fatal cases of measles and the 6 deaths from diphtheria were slightly in excess of the numbers in recent weeks, and were all recorded in Dublin. The fatal cases of typhus and scarlet fever also occurred in Dublin.

The deaths referred to diseases of the respiratory system, which had been 148 and 136 in the two preceding weeks, rose to 173 in the week under notice. Of the 521 deaths from all causes in the 22 Irish towns, 151, or 29 per cent., occurred in public institutions, and 8 resulted from different forms of violence. The causes of 23, or 4·4 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 large English towns the proportion of uncertified causes of death did not exceed 0·7 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff-Surgeon W. H. Daw to the *Doris*. Surgeon G. B. Scott to be Inspector of Sick Berth Staff at Royal Naval Hospital, Chatham.

ROYAL ARMY MEDICAL CORPS.

Major Frederick Kiddle, from the seconded list, is restored to the establishment (dated March 1st, 1912).

Captain William R. O'Farrell is seconded for service with the Egyptian Army (dated Feb. 21st, 1912).

Lieutenant-Colonel Sir David Semple has been granted leave of absence home from Kasauli for one year and one month. Lieutenant-Colonel C. Birt has been transferred from charge of the Royal Infirmary, Phœnix Park, Dublin, to the London district as expert on Tropical Diseases on the Advisory Board for Medical Services at the War Office. Lieutenant-Colonel C. A. Lane has embarked for a tour of service in India.

Major W. T. Mould has been appointed to command the Station Hospital at Barrackpore. Major W. R. Blackwell has been transferred from Delhi to Lucknow for duty at the Military Hospital. Major P. H. Falkner has arrived home from Bermuda. Major K. B. Barnett has taken up duty at Shorncliffe. Major F. J. W. Porter has embarked for a tour of service in India. Major H. G. Martin has been detailed for duty on board the transport s s. *Rohilla*, which left Karachi for Southampton on March 28th. Major H. M. Dunn has been selected for appointment to hold charge of the Surgical Division of the Royal Victoria Hospital at Netley. Major P. MacKessack has arrived home on duty from Mauritius. Major J. Hennessy has been posted for duty to the Southern Command. Major C. H. Straton has embarked for a tour of service in South Africa. Major J. D. G. Macpherson has been granted eight months' general leave of absence home from India. Major E. P. Connolly has been transferred from Lahore to the station hospital at Rawal Pindi.

Captain B. A. Craig has joined for duty at Newcastle. Captain A. H. Bond has been granted six months' general leave of absence home from India. Captain H. E. J. A. Howley has been transferred from Cawnpore to Dinapur. Captain C. T. Conyngham has taken up duty as Specialist in Dermatology and Venereal Diseases to the Fourth (Quetta) Division. Captain R. E. Humfrey has arrived home for duty from India. Captain D. T. MacCarthy has been transferred from Shwebo to the Station Hospital at Mandalay. Captain A. Dawson has taken up duty as Specialist in the Prevention of Disease and Charge of the Brigade Research Laboratory at Aden in succession to Captain J. Powell. Captain H. B. Connell has embarked for a tour of service on the West Coast of Africa. Captain J. B. Hanafin has been transferred from the Second (Rawal Pindi) Division to the Third (Lahore) Division. Captain V. T. Carruthers has joined for duty at Queenstown. Captain C. M. Drew has arrived home on leave of absence from Egypt. Captain A. W. Sampey has been appointed to the Northern Army for duty in the Seventh (Meerut) Division. Captain G. B. Edwards has arrived home for duty from Mauritius. Captain B. A. Odlum has been transferred from Wynberg to Bloemfontein. Captain W. E. C. Lunn has been granted six months' general leave of absence home from India. Captain C. E. Fleming has joined for duty at Potchefstroom as Specialist in Ophthalmology. Captain E. Bennett has joined the Station Hospital at Delhi for duty. Captain J. F. Whelan has been transferred from Nowgong to the Station Hospital at Jhansi. Captain W. C. Nimmo has been appointed for duty to the Eastern Command. Captain P. J. Marett has been transferred to the home establishment from Malta. Captain J. P. J. Murphy has embarked for a tour of service in South Africa.

INDIAN MEDICAL SERVICE.

The King has approved of the retirement of the undermentioned officer:—Lieutenant-Colonel Robert Shore (dated Dec. 25th, 1911).

Lieutenant-Colonel J. C. S. Vaughan has been selected to officiate as Civil Surgeon of the First Class during the absence on leave of Lieutenant-Colonel F. C. Clarkson. The services of Lieutenant-Colonel J. Crimmin, V.C., have been replaced at the disposal of the Government of Bombay. Major R. P. Wilson, officiating civil surgeon at Cuttack, has been granted privilege leave of absence for three months, combined with furlough for 15 months. The services of Major W. E. McKechnie have been placed permanently at the disposal of the Government of the United Provinces of Agra and Oudh. Major V. B. Bennett has been appointed to officiate as a First-Class Civil Surgeon during the absence on deputation of Lieutenant-Colonel B. B. Grayfoot. Major R. D. Green, civil surgeon in the Eastern Bengal Province, has been granted two months' extension of leave on medical certificate. Major C. Hudson, D.S.O., has arrived home on leave of absence. Major D. Harvey has been selected to officiate as Director of the Central Research Institute of India at Kasauli during the absence on leave of Lieutenant-Colonel Sir David Semple, R.A.M.C. Major G. McI. C. Smith has been appointed to officiate as Professor of Materia Medica at the Lahore Medical College during the absence of Major A. G. Melville. Major D. C. Kemp has returned to India from furlough. Major J. L. Marjoribanks has taken up duty as Deputy Sanitary Commissioner of the Western Registration District, Bombay. Major J. W. D. Megaw, officiating professor of pathology at the Medical College, Calcutta, has arrived home on 15 months' leave of absence.

Captain W. D. A. Keys has been appointed to officiate as Civil Surgeon at Karwar during the absence on leave of Captain B. B. Paymaster. Captain R. E. Wright has taken up duty as Assistant Director of the Pasteur Institute of Southern India at Candy. Captain R. E. Lloyd, professor of biology at the Medical College, Calcutta, has arrived home on 15 months' leave of absence. Captain H. W. Illius, Bengal Presidency, has been granted an extension of leave. Captain H. Crossle has been appointed an Officiating Agency Surgeon of the Second Class and Civil Surgeon at Miranshah. The services of Captain P. Heffernan have been placed permanently at the disposal of the Government of Madras Presidency. Captain W. M. Houston, on return from leave, has been appointed to act as Medical Officer of the Political Agency at Kathiawar, and to hold charge of the West Hospital at Rajkot. Captain A. P. G. Lorimer has taken up duty as Resident Medical Officer at the Medical College Hospital, Madras. Captain J. W. McCoy, on return from leave, has been appointed Civil Surgeon at Dinapur. Captain J. P. Cameron, Madras Presidency, has been granted an extension of leave.

Lieutenant G. G. James, officiating medical officer to the 96th Berar Infantry, has been appointed as Mobile Assistant to the Chief Quarantine Medical Officer in the Persian Gulf. Lieutenant R. B. Lloyd has been granted three months' extension of leave by the Secretary of State for India on the recommendation of a Medical Board.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Morton W. Ruthven is seconded for service under the Colonial Office (dated March 18th, 1912).

The undermentioned Lieutenants are confirmed in their rank:—Sarsfield J. A. H. Walshe, Charles A. Bignold, Robert G. Shaw.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Notts and Derby Mounted Brigade Field Ambulance, Royal Army Medical Corps: Lieutenant Oswald K. Wright to be Captain (dated Feb. 17th, 1912).

2nd London (City of London) General Hospital, Royal Army Medical Corps: Major Eustace Maude Callender, from the 1st London (City of London) Field Ambulance, Royal Army Medical Corps, to be Lieutenant-Colonel (dated March 13th, 1912).

3rd London General Hospital, Royal Army Medical Corps: Sidney Maynard Smith to be Captain (dated March 18th, 1912). William Henry Willcox to be Captain (dated March 18th, 1912).

4th Northern General Hospital, Royal Army Medical Corps: Godfrey John Ralph Lowe (late Captain, 4th Battalion, The Lincolnshire Regiment) to be Captain (dated Feb. 27th, 1912). Serjeant Arthur Lowndes Yates, from the Inns of Court Officers Training Corps, to be Captain (dated April 3rd, 1912).

For Attachment to Units other than Medical Units.—Alfred

Irving Shepheard-Walwyn to be Lieutenant (dated Feb. 1st, 1912). Archibald Campbell to be Lieutenant (dated Feb. 2nd, 1912), Edward Andrew Gregg (late Lieutenant, Royal Army Medical Corps (Special Reserve)) to be Lieutenant (dated Feb. 12th, 1912). William Rogers (late Second Lieutenant, 7th (Cyclist) Battalion, The Welsh Regiment), to be Lieutenant (dated Feb. 18th, 1912). Norman Guy Hawtrey Salmon to be Lieutenant (dated Feb. 19th, 1912). Lieutenant Charles Leonard Isaac, from the 3rd Welsh Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated April 3rd, 1912).

EXAMINATION FOR APPOINTMENTS AS ACTING SURGEONS IN THE NAVAL MEDICAL SERVICE.

At the examination for the Naval Medical Service held on April 1st, 2nd, and 3rd, 18 gentlemen sat, and of these nine were successful :—

	Marks.*		Marks.
R. M. R. Thursfield	1575	J. P. Shorten	1350
L. Moss	1541	F. J. Burke	1340
J. A. O'Flynn	1405	G. E. D. Ellis	1315
A. Rees Price	1400	G. V. Hobbs	1305
F. J. D. Twigg	1355		

* The highest total number of marks possible is 2400.

ROYAL ARMY MEDICAL CORPS EXAMINATIONS.

A competition for not less than 20 commissions in the Royal Army Medical Corps will be held on July 24th next and following days. Applications to compete should be made to the Secretary, War Office, not later than July 15th.

The King has conferred the decoration of the Royal Red Cross upon Miss Georgina Phœbe Herbert Haines, matron of the Convalescent Home at Osborne, in recognition of her special devotion and competency in nursing invalid officers of His Majesty's Navy and Army.

Correspondence.

"Audi alteram partem."

THE NOMENCLATURE OF DISEASES.

To the Editor of THE LANCET.

SIR,—Dr. S. W. MacIlwaine, whose interesting reflections on medical philosophy are well known to those who are conversant with the subject, objects to my definition of "a disease" as "a certain assemblage and succession of symptoms, normal and abnormal, recurring with fair uniformity," because it does not include the causes of disease. It does not because it did not pretend and, I venture to think, ought not to pretend to do so. Your own note upon Dr. MacIlwaine's letter is conclusive—viz., that in this case a disease is not a disease until its causes are known. Thus, to use one of Dr. MacIlwaine's own instances, typhoid fever was not a disease until Eberth discovered its bacillus and scarlet fever is not a disease even yet. If we try to define, let us say, a Parsee, we surely make this attempt without direct reference to, or inclusion of the causes of, a Parseeism.

And to your reply I would add that such a conception of causes of disease as Dr. MacIlwaine desires would lead us into false notions of causation. For example, Dr. MacIlwaine tells us that "typhoid fever has a definite and constant cause ..... a specific microbe." Surely the specific microbe is, in any particular case of typhoid, but one of an infinite complexity of causes. Were the microbe the "definite and constant" cause, every person into whom the microbe made an entry would become the subject of the disease, which, to use the word in its Euclidean sense, is "absurd."

I am, Sir, yours faithfully,

Ambleside, April 8th, 1912. CLIFFORD ALLBUTT.

CÆSAREAN SECTION FOR DOUBLE MONSTROSITY.

To the Editor of THE LANCET.

SIR,—Mr. Ligat's case of Cæsarean section for a double monster recorded in THE LANCET of March 30th is one of much interest, and he is to be congratulated on the success of his treatment. Such cases are very uncommon, but a sufficient number have now been recorded in the literature to enable us to draw certain conclusions as to the best methods of dealing with this complication of labour. It is very questionable whether in most cases of double monster any operation which imperils the mother's life is justifiable, and the majority of obstetricians who have written on this subject maintain that operations of this character should only be undertaken in very exceptional circumstances. The matter is fully discussed in Birnbaum's "Klinik der Missbildungen und Congenitalen Erkrankungen," a translation of which is at present in the press, and will shortly be published. Of 119 cases of double monster collected by Hohl in his work on the subject ("Die Geburten der Missgestalteter, Kranker, und Todter Kinder"), in 73 delivery occurred naturally, and of the 46 cases delivered with artificial aid in two only was Cæsarean section performed. Of these 119 cases, four of the mothers died, but it must be remembered that Hohl's work was published as long ago as 1850. Of 49 cases of labour with a double monster recorded in the Transactions of the Obstetrical Society of London, in only one apparently did the mother die, a case quoted by Playfair, and occurring in 1724.

Spiegelberg, Küstner, and Strassmann all reject Cæsarean section, and the first, quite rightly in my opinion, says that the surgeon "should not for the problematical preservation of the life of the child place in jeopardy the life of the mother." Küstner maintains that Cæsarean section is only justifiable when a complete internal examination has shown that there is a strong probability of the survival of the monster. He points out, however, that when such an examination is possible for purposes of diagnosis other simpler methods of delivery, such as version or perforation, are likely to prove less dangerous for the mother. If Cæsarean section is chosen it must be certain that in the particular case in question it is the procedure which offers the least risk to the mother, since the chances of the survival of the monster are so small as to be almost negligible. Judging by the recorded cases, we must conclude that in cases of double monsters presenting by the breech or feet, bringing down all the legs, perforation, or embryotomy is generally the least dangerous procedure for the mother. It would add greatly to the value of Mr. Ligat's case if he would state what the exact position of the monster was found to be on internal examination, and more especially where the connecting band was lying, and what was the condition of the uterus. Although in this case Cæsarean section terminated successfully, yet as Amand Routh has shown, while the mortality of Cæsarean section in cases not in labour, or in labour with the membranes unruptured, is as low as 2·9 per cent., yet in cases in labour with the membranes ruptured, or in which repeated examinations have been made, the mortality is at least 17·3 per cent. It would therefore require very exceptional conditions to justify exposing the mother to such a risk in a labour complicated by a double monster in which the second stage had lasted some hours, and in which other attempts had been made to effect delivery. I am, Sir, yours faithfully,

Wimpole-street, W., April 6th, 1912. G. BLACKER.

To the Editor of THE LANCET.

SIR,—Since my note *re* Cæsarean Section for Double Monstrosity was published in THE LANCET of March 30th, Dr. J. W. Ballantyne, of Edinburgh, has drawn my attention to two previous cases published in the *Boston Medical and Surgical Journal* for 1893.

Dr. Jas. Collins and Dr. Philip Leidy, of Philadelphia, had a case in 1881; the patient had been in labour for five days, and died three days after the operation from exhaustion. Dr. J. F. Croston and Dr. Maurice D. Clarke had a successful case in 1893.

I am, Sir, yours faithfully,

St. Leonards-on-Sea, April 2nd, 1912. DAVID LIGAT.

PSYCHIATRY IN ENGLAND: ITS PRESENT STATE AND ITS OUTLOOK.

To the Editor of THE LANCET.

SIR,—Anyone who has had the opportunity of comparing the practice of psychiatry in this country with that on the continent will welcome your leading article, which points out so plainly why "those who have the interests of psychiatry at heart can no longer regard the situation with complacency."

It will be generally admitted that in respect to material comforts the insane in this country are quite as well off as

in any other part of the world. The humanitarian movement of the nineteenth century so effectively awakened the public conscience that abuses were swept away and a high standard of comfort secured for the insane. I fear that the amount of research work undertaken bears no relation to the excellence of the accommodation provided for our patients. The scientific spirit has not developed at the same rate as humanitarian sentiment. I am not sure, however, that in respect to original work we are as far behind our neighbours as your article seems to imply; yet there is no doubt that in the United Kingdom fewer opportunities are provided for advanced work, the number of workers is relatively smaller, and psychiatry as a branch of medicine is more isolated and less valued than on the continent. Three reasons may be cited in explanation of this :—

1. The absence of coördination between psychiatry and general medicine. Between the general hospital and the asylum there is nothing in common: each goes its own way, ignorant of the work done by the other. In Berlin and in many other continental cities the general hospital consists of a number of detached pavilions, one of which is devoted to nervous and mental diseases. This is under the charge of a specialist assisted by a staff of qualified assistant physicians; everything is provided that may assist in treatment, there is a large out-patient department, and patients apply for treatment in exactly the same way as in any other department of the hospital. This pavilion, which in effect is a small but highly equipped hospital, naturally becomes the centre for teaching and research. In this country, if a poor man breaks down mentally no hospital will receive him; he can get no advice from those best qualified to give it. If he becomes difficult to manage he is sent to the workhouse infirmary, and probably does not receive treatment in a properly equipped institution until a fortnight or perhaps three weeks have elapsed. Our system is bad from all points of view, and effectively divorces psychiatry from general medicine.

2. The Lunacy Acts entirely ignore the assistant medical officers, who do the greater part of the medical work in our asylums. All authority is vested in the superintendent or "manager." In this way an autocratic system of government is perpetuated which is essentially unfair to experienced assistants, who become subordinates rather than medical colleagues. This legal disability tends to make asylum service unpopular.

3. There is no doubt that apart from the peculiar difficulties of the subject the newly qualified man seeking a career is discouraged from taking up psychiatry. When I deserted general medicine to take an appointment at a hospital for the insane, I well remember the look of surprise mingled with pity with which the announcement was received by my medical friends. I do not think the attitude of the profession has greatly altered during the 20 years that have since elapsed. Yet there is no branch of medicine which gives greater scope for the physician than the study of mental disorders, and no vocation more worthy than that which strives to prevent and arrest insanity.

I can, nevertheless, understand why the specialty is less attractive in England than abroad. The general conditions are less favourable. The uncertainty in respect to promotion, the indifference of authorities towards scientific work, the compulsory celibacy of so many, the isolation from the world of general medicine, make a man hesitate before embarking on psychiatry as a career. It must be admitted that if he makes inquiries he will find that sometimes vacancies are filled without reference to medical attainments, and appointments are apt to fall to those who are able to pull the strings locally, irrespective of the interests of the service generally. This disregard of patent merit is, of course, not peculiar to asylum service, but its consequences are graver than in most departments of medicine. Thus it happens that every year men of ability and promise who would have done valuable work throw up their posts in order to take up some other branch of medical practice.

It is easier to see what is wrong than to find a remedy. Reconstruction of our hospital system seems hardly possible, nor can we expect any immediate alteration in the lunacy laws. Much, however, might be done if public interest could be aroused. It is within the power of local authorities to deal with many of the questions I have raised, if they could be convinced of the necessity. How to do this is the problem before us, and the first step is to carry with us the profession generally. To have the support of THE LANCET in this movement is a great encouragement to all of us who are working and hoping for better things.

I am, Sir, yours faithfully,

The Retreat, York, April 9th, 1912. BEDFORD PIERCE.

To the Editor of THE LANCET.

SIR,—In connexion with your leading article in THE LANCET of April 6th on "Psychiatry in England," may I suggest a practical application to the work of general practitioners in this respect? It seems to me that the want of general clinical tuition in this subject has reacted on the general practitioner in this country in his general work. We have a tendency to take a too material and so-to-speak "macroscopic" view of our patients, and are somewhat apt to overlook, or at any rate belittle, the reaction of mind on body and the modifying effect of temperament on disease in our everyday work.

A good practical training in psychiatry helps a practitioner in detecting and weighing the mind-value in the illnesses of our patients, when, to a superficial view, the complaint is purely bodily.—I am, Sir, yours faithfully,

G. D. PARKER, M.B. Lond.

Hyde Park-mansions, W., April 8th, 1912.

THE BED ISOLATION OF CASES OF INFECTIOUS DISEASE.

To the Editor of THE LANCET.

SIR,—I have too much appreciation of Dr. J. Biernacki's work to wish to be carping. Nor is there occasion. But I am not quite sure what he is driving at in his letter published to-day. It is a fact that the name "bed isolation" or "case isolation" was first applied by me to a method of dealing with infectious disease on the lines of strict surgical asepsis without structural or symbolic helps, first devised and used by me at Mortlake about 1907. The first published description of this method and its principles was given in the course of a paper I read at the Royal Society of Medicine two years ago.[1] No one present had a word to say for the plan, and only one gentleman, Dr. F. M. Turner, took the trouble to come to Mortlake to see for himself.

At Mortlake we had a small hospital, and the method had to be applied to all wards at once. Comparative simultaneous observations were impossible. Comparative consecutive observations, when embodied in statistics, are obviously exposed to criticism. I therefore never published any statistics. Dr. C. Rundle and Dr. A. H. G. Burton at Fazakerley have been able to do what I wish I could have done. They have demonstrated, to Dr. Biernacki's satisfaction, that the method of bed isolation is the best. I congratulate them most heartily on their success, but their acknowledgment of my work was not very frank! It is quite likely that my details have been improved on by Dr. Rundle and Dr. Burton. It would be odd if they had not been. We were at Mortlake always making improvements. Probably my successor, Dr. T. Strain, has made more still. I have not had the opportunity of seeing Fazakerley, and so have no right to criticise any variations that may have been introduced there. But, on the other hand, I often used to angle to get Dr. Biernacki to Mortlake—without success. If he had come I could have shown him sometimes five or six diseases, all "infectious," being treated side by side in a twelve-bed ward. In fact, in 1910 we could have shown him all that he is about to try in Plaistow in 1912.

But when Dr. Biernacki and I talk about "mouth and throat cleansing" we are speaking of different things. I quite admit that routine treatment of throats with watery solutions and a big glass syringe is dangerous and improper for several reasons. I have always protested against the method. But the routine use of an oily solution or emulsion with an atomiser is another story. It can be carried out without the nurse touching the patient. It is beneficial therapeutically, and, I think, eliminates practically all risk of aerial dissemination from the mouth and nose. Why not try it? When at Mortlake for septic and other conditions mechanical cleansing of the mouth and nose was required,

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[1] See THE LANCET, Feb. 19th, 1910, p. 477.

the task was undertaken by the senior nurse on duty, and she wore rubber gloves. There was then no spread.

I am sincerely sorry if Dr. Biernacki thinks that when speaking of barriers as symbolic I meant to sneer. I did not. But I still think that the barrier is a symbol. Symbols have definite purposes, of course. So has the bar of the House of Commons. But this bar of the House of Commons, like the mace, is a symbol. I do not deny that the glass wall and the wet sheet may have their use in a restricted measure. Perhaps the wet sheet has the greater co-efficient of efficiency. But since if they are made use of, the nurses and attendants have it perpetually "suggested" to them that it is the wall of glass or the sheet that matters, in course of time a fetishistic value is attached to these things far greater than their real value. And then they get slack over the cleansing of the hands and so forth. The secret of success, in what I think the more excellent way, is to lay most demonstrative stress on the things that matter most, and to so devise the practical routine or ritual that "suggestion" always operates in favour of carrying out what is most necessary. That is why I preferred to see at the foot of each bed a washstand that hit the eye rather than here and there the thin red line of the barrier. But once more I cordially appreciate how great an advance the barrier system was, and how much I learnt from Plaistow. My own task was to find out a way of treating all diseases in one ward in order to save building and administration expenses. I believe the bed isolation system is such a method. And it also does all that the barrier system does—to wit, it abolishes the ordinary cross and secondary infections that occur even when separate wards are nominally reserved for different diseases.

I am, Sir, yours faithfully,

Welbeck-street, W., April 6th, 1912. F. G. CROOKSHANK.

To the Editor of THE LANCET.

SIR,—I have read Dr. J. Biernacki's letter in your issue of April 6th. He writes: "It is certain that, where a very high level of preventive nursing cannot be ensured, partitions will stop cross infection which would occur if bed isolation or the barrier were relied on." Since Dr. Biernacki is certain that partitions will, in certain circumstances, stop cross infection, whereas I am not, I would much like proof of his conclusion. In these same circumstances he says cross infection would occur were "bed isolation" relied upon. Dr. Rundle and Dr. Burton in their paper recording their excellent work say: "It may be questioned whether glass partitions do not involve a false security in regard to the nursing staff, rather than that protection to the patient which is claimed for them." I am inclined to agree with this statement, and therefore it will be most interesting to learn how Dr. Biernacki comes to be certain that cross infection would occur in the "bed isolation" method and not where there are partitions.—I am, Sir, yours faithfully,

FREDERIC THOMSON.

North-Eastern Hospital, St. Ann's-road, Tottenham, N., April 6th, 1912.

PIPE, CIGAR, OR CIGARETTE?

To the Editor of THE LANCET.

SIR,—The results of your investigation into the toxic factor in tobacco will be highly appreciated by your readers. There are some points not touched on in the present article which, if I may make the suggestion, could be advantageously dealt with in the further article promised for a future date.

Cigarette smokers know that if a holder be used the holder will "foul" as rapidly as a pipe-stem. Using an average length holder—say, 2½ inches—it would appear that much of the products of combustion are deposited in it. Is the cigarette smoked with a holder less toxic than if a holder be not used? Does the quality of the cigarette-paper affect the result in any way? Many cigarette-papers are impregnated with saltpetre; a cigarette wrapped in such paper will burn (once started) to the end without any help from the smoker. I lighted four different brands of Virginian cigarettes, fixed in holders and so as to be free of table or ash-tray; three of them burned right to the end. One would be curious to know the result of a test using the best and poor paper on the same tobacco.

As to the pipe, would results be the same with a porous clay pipe as with a briar-root? The shape of the pipe may be a factor—the plain-bore stem compared with the many kinds of filter or intercepting pipes. In considering the toxic effects of cigarette smoking so-called "inhaling" has to be remembered—a common practice, and one that does not obtain with devotees of the pipe or cigar.

I am, Sir, yours faithfully,

MARTIN F. CUSACK.

Home Park-road, Wimbledon Park, S.W., April 6th, 1912.

THE ADMIRALTY TEST FOR COLOUR-BLINDNESS.

To the Editor of THE LANCET.

SIR,—In a book just published Mr. J. H. Parsons has stated that the test for colour-blindness used for recruits for the navy is Holmgren's wool test. My lantern has been supplied to every one of the final recruiting stations and is the official test. I should have allowed the statement to pass unnoticed if it had not been for Mr. Parsons's conspicuous advocacy of the wool test. He does not mention that there is a difference of opinion, but recommends the wool test, describing the changes which have been made without in any way giving me credit for them, but attributing them to someone else. It is curious that advocates of the wool test continually alter it in accordance with my suggestions whilst stating that the test should be used in strict accordance with Holmgren's instructions. In my book on colour-blindness (International Scientific Series, 1891 Ed.) I criticised the Holmgren test, and I adhere to every statement made there, and these statements have been confirmed by observers in all parts of the world. I pointed out that many persons could pass the green test, and therefore would be regarded by Holmgren as normal, who failed with the rose test. The Board of Trade then used all three tests of Holmgren in all cases instead of the green only as advised by him. I pointed out that the best test colours were orange, violet, red, and blue-green. Two colours only slightly differing from my two test colours orange and violet have now been added to the test. On this point I cannot do better than quote the report of the committee of the Ophthalmological Society on Colour Vision.[1] "But we agree with Dr. Edridge-Green that some cases of colour-blindness cannot be detected by Holmgren's test however skilfully and fully used; and that others that satisfy Holmgren's first test (pale green) easily, and would therefore be passed as normal in most ordinary routine examinations, are exposed by a careful use of Holmgren's second test (rose test colour). We further agree with Dr. Edridge-Green that some at least of the cases just referred to, when tried with the signal lantern, make mistakes that at once disqualify them. The discovery of the defect in such cases can be made with certainty and, as a rule, easily by a modification of the wool-test, such as that of Dr. Edridge-Green, in which, as the result of his investigations, he recommends a series of colours different from Holmgren's." In spite of this I found that I could not construct a wool test that was satisfactory and discarded it entirely in favour of the lantern. The Holmgren test misses about half (or, according to German authorities, more than half) of those who are dangerously colour-blind, in addition to rejecting many normal-sighted persons and those with slight and unimportant defects of colour-perception.

Mr. Parsons states that no test is of any use in which colour names are used. Can he give a single instance of a modern test in which they are not employed? I can say most emphatically that no test is of any use in which colour names are not employed. The following instance from the Board of Trade reports will suffice as an illustration.[2] A sailor was examined on June 9th, 1894, by the old test and failed. He made the following errors as to coloured lights. He designated pink as green, green as neutral or blue, and bottle-green as salmon. He was examined again on July 7th, 1894, and he again failed. He called pink green, and green neutral. He has since been specially re-examined and passed. Could a normal-sighted person after four and a half years' experience at sea mistake pink for green, green for neutral, and bottle-green for salmon?

At two international congresses, one on medicine and

[1] Transactions of the Ophthalmological Society, 1904, p. 367.
[2] THE LANCET, vol. ii., 1896, p. 1715.

one on physiology, I did not meet with a single man who advocated the wool test. Mr. Parsons must be aware from the numerous papers which have been published in all parts of the world of the universal condemnation of this test. Though those in authority who have recommended the methods which have been so severely condemned may be very grateful to him for his advocacy, the writer of a text-book is hardly dealing fairly with a subject when he entirely ignores the work and opinions of the vast majority.

I am, Sir, yours faithfully,

F. W. EDRIDGE-GREEN.

Willesden Green, N.W., April 5th, 1912.

DYSENTERY AND LIVER ABSCESS IN BOMBAY.

To the Editor of THE LANCET.

SIR,—On p. 1630 of THE LANCET of Dec. 9th, 1911, reference was made to myself as joint author of Scientific Memoir, Government of India, No. 47, on "Dysentery and Liver Abscess in Bombay."

I should like to point out that, as indicated in the introduction to that memoir, the responsibility for the form in which the report is presented was not shared by me. The only contribution made by me to the memoir was in the form of an independent note on the report. By some error this note was printed in the text of the memoir among the "General Conclusions" (No. 15, p. 53). I should be glad if you would kindly publish this explanation.

I am, Sir, yours faithfully,

Jullundur, Punjab, March 21st, 1912. R. T. WELLS.

OSMOTIC PRESSURE AND ITS PHYSIOLOGICAL BEARING.

To the Editor of THE LANCET.

SIR,—The interesting annotation under the above heading in your last issue adds another proof of the great importance of physical chemistry in medicine. Your columns have long recognised this, but there are still some to whom such statements as "pure water is a poison" or "pure water is very caustic" are startling. The celebrated "poison spring" at Gastein in the Tyrol has been known for years as one of the purest natural waters existing, and this extreme purity or poorness in ions leads to the swelling and destruction of the epithelial cells of the digestive tract, just as distilled water, owing to the difference of osmotic pressure, may cause catarrh of the stomach by rapidly entering the cells, salts passing out, the cells drying and being cast off. As pointed out in your note, the osmotic force of fluids has to be reckoned with not only when they are used for injection but when also they are used for application to wounds both superficial and deep.

Professor Leduc refers to this in his admirable book on "Electric Ions and their Use in Medicine," for he says: "Whenever one makes a wound one should take into consideration the osmotic pressure of the liquids brought into contact with it, in order to avoid damaging the vitality of the living surfaces. This precaution is still more necessary when foreign liquids are put in contact with the delicate cells of surfaces covered with serous membranes. Moist applications to remove dry crusts, such as those of eczema and impetigo, are more successful the lower the osmotic pressure of the liquid employed. The most useful applications for this purpose are composed of absorbent lint impregnated with boiled distilled water, under the influence of which the morbid cells rapidly swell up, burst, and are dissolved." If I am not mistaken, "the new physics" and "the new chemistry," ions, electrons, gels, and sols, are going to remove much empiricism from medicine, and "the new medicine" will necessarily involve a new preliminary training of its workers.—I am, Sir, yours faithfully,

April 9th, 1912. COLLOID.

MURDER BY POISON.

To the Editor of THE LANCET.

SIR,—In your very interesting annotation, Murder by Poison, in THE LANCET of March 30th, you mention the trials for murder by poison of Lamson, Pritchard, and Palmer as being the most notable trials of medical men for murder in the last century. One equally notable was that of Dr. Cross, Shandy Hall, Dripsey. A point of interest in this case was that the Crown analyst, in giving evidence, admitted that in his first calculation of the amount of arsenic found he had made an error; nevertheless, a conviction was obtained.

With reference to the trial of Palmer, I read, some years ago, a pamphlet published shortly after the trial, giving a full account of the trial, a history of Palmer's life, and if my memory serves me rightly it mentions the effort made to change the name of the town. I think this pamphlet is not the same as the one mentioned as forming Appendix I. of Mr. Knott's book. The Palmerston incident is in all probability based on fact, as the inhabitants of Rugeley did not make a second attempt to change the name.

I am, Sir, yours faithfully,

April 4th, 1912. CIVIL SURGEON.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—Your correspondent, Dr. C. F. Seville, in THE LANCET of March 30th, p. 893, asks, "Why do not the advocates of payment for work done tell us how they would deal with the two great obstacles to the system they propose?"—viz., "overcharge by doctors and bookkeeping." It is quite evident that Dr. Seville has not read much of the correspondence on this subject, either in THE LANCET or the *British Medical Journal*, for he remarks with regard to the latter obstacle—i.e., bookkeeping—that it "has not, so far as I know, been suggested hitherto." As a matter of fact, both these points have been repeatedly dealt with by the advocates of payment for work done, but as others besides Dr. Seville have probably not heard or seen the answers to these questions perhaps you will allow me to reiterate them.

(*a*) *Over-charging by doctors.*—I presume by this Dr. Seville really means *over-visitation*, as upon an agreed scale of fees, with a proper record of visits paid, *overcharging* for work actually done would be impossible. I have dealt with this specific charge of over-visitation in the *British Medical Journal* supplement, March 9th, 1912, p 302, to which I would refer Dr. Seville and others interested. In the first place I challenge Dr. Seville and those who think similarly to prove their charge—viz, that doctors generally are addicted to over-visiting, also to state the grounds of this belief in the wholesale dishonesty of their fellow practitioners, for this is what the charge really amounts to. Instead of evidence we are almost invariably met with "the human nature" argument, which is certainly not evidence but a most gratuitous assumption. It should not be necessary, at least before an audience of medical men, to insist that we are not a set of ravenous sharks ready to devour all that comes within our reach. The whole history of our profession shows that it is *we* who allow ourselves to be fed upon by, and not we who feed upon, the community. No class or profession, taken in the bulk, have given more of their time and self-sacrificing energy for their fellows and received less in monetary equivalent for their services than ours. No body of men have been more exploited by individuals, societies, pseudo-philanthropists, and politicians. Few, if any, of us have ever neglected the call of suffering humanity even when we knew full well that virtue would have to be its own (and only) reward. Finally, are we not trusted daily with the lives, happiness, and inmost personal secrets of large numbers of our fellow countrymen and countrywomen? Yet it is calmly suggested, nay, more than merely suggested, definitely alleged, that if we agree to work the Insurance Act under a system of payment for attendance we shall immediately lose our accustomed probity, self-respect, and patriotism, and forthwith pile up huge bills for unnecessary visits which will swamp the national exchequer. This is Dr. Seville's reasoning developed to its logical conclusion, which is in my opinion to reduce it to an absurdity. If the medical profession is not to be trusted in regard to frequency of visitation upon sick people, it is *a fortiori* unfit to have the medical care and treatment of these people, and to be trusted with their reputations and concerns. No doubt some men are inclined to attend oftener than others; they are naturally more anxious and fussy, and these may possibly put in some strictly unnecessary visits. On the other hand, other men from over-scrupulousness in the opposite direction, or because they have more to do than they can manage, may visit too

little. These extremes will probably be found to balance each other, but it is surely in the patient's and the community's interest that the doctor should pay a few too many rather than any too few visits. Now, on the capitation system, where the pay is the same whatever the number of visits made, there must be a strong inducement to those who are influenced by the fees rather than by the patient's welfare to under and inadequately visit. Apart, however, from the above general considerations, I would point out to Dr. Seville and his fellow capitationists that as a matter of practical experience, where the system of payment for work done is now in vogue—e.g., in the National Deposit Friendly Society, Scottish Widows' Provident Association, &c.—the alleged "obstacle" of over-visitation is practically non-existent. But even granting, for the sake of argument, that the danger of over-visitation is a considerable one, it is by no means impossible to devise safeguards. The following have been suggested: 1. The liability of the State could be limited to a maximum per patient per annum, the remainder being met by the patient, so that the restraining conditions now obtaining in general practice are largely preserved. 2. The fee could in each instance be paid partly by the Insurance Fund and partly by the patient—e.g., indirectly or out of a savings or "deposit" fund, as in the National Deposit Friendly Society. Here, again, the restraints now obtaining in general practice also hold good. 3. Medical inspectors or supervisors, chosen from older and more experienced practitioners, could examine all attendance vouchers and inquire into alleged cases of over- or under-attendance, reporting the same to the medical committees, who should have power to deal with such cases. 4. The voucher system itself is a considerable check on over-visitation or over-charging. In the National Deposit Friendly Society, which might well be copied in this matter, in each case of illness the patient is provided by the secretary with a form, which has to be signed by the doctor, stating the nature of the illness, &c., and each visit is dated and initialled by the doctor. An additional safeguard would be to have it also initialled by the patient or his guardian, and arranged in duplicate, so that the doctor could keep one-half and the patient the other. The patients' halves would go to the societies, and so to the Insurance Authorities, the doctors' halves would be preserved by them and sent in in batches at the end of the quarter or half-year, and their correctness would be checked before paying. 5. Any extraordinarily long attendance could be made the subject of special inquiry, and if necessary a special consultation or medical referee ordered in the interests of the Insurance Fund, if not of the patient. This would check any serious malingering or collusion. 6. Special arrangement could and probably would be made for dealing with chronic and incurable cases—e.g., by institutional or other methods, or special terms could be made with medical men for supervision of such cases, leaving more acute illnesses to be charged for *pro rata* on an agreed tariff. This plan would also be the best for arranging for the care and treatment of chronic cases and bad lives, which are not capable of being included in any scheme of insurance. Mr. Lloyd George himself has admitted that these cases stand in a different category from the healthy insured, but he has not said how he proposes to secure—i.e., pay for—adequate medical treatment for such cases.

(*b*) *Bookkeeping.*—The second so-called "obstacle" is even more easily dealt with. 1. Does Dr. Seville imagine that under the capitation system there will be no bookkeeping to be done, that he will not have to keep careful records of his cases, make frequent reports when called upon, and have no end of certifying and other red-tape work to do? 2. Besides, what about extras? will not these have to be booked? 3. Further, I presume none of us will be absolutely dependent for practice upon State beneficiaries, it is to be hoped we shall have *some* private patients left, if not very many. In any case, I am afraid if Dr. Seville thinks the Insurance Act means the millennium as regards the bugbear of bookkeeping he will have a rude awakening. 4. But under payment for work done, with a proper voucher system for attendance, bookkeeping will be reduced to its simplest terms. A visiting-list, a file for vouchers, and a cash book should meet the necessities of the case. The visiting-list or attendance-list will be a countercheck to the voucher-file, and it will be a simple matter to calculate the totals due for any given month, quarter, &c. 5. Of course, if only a partial insurance is given, the bookkeeping will be more complicated, but not so bad as it now is in general practice, as the lump sums received from the Insurance Fund will replace large numbers of the small payments which are what make our bookkeeping so troublesome at present. 6. But even if bookkeeping were a far more troublesome and irksome matter than it now is, we should surely prefer to bear with the inconvenience than to sell our independence for a false ideal of ease and security.

I am, Sir, yours faithfully,

Bowdon, April 2nd, 1912. P. R. COOPER.

To the Editor of THE LANCET.

SIR,—The fact that the system of payment for actual work done has been carried out by the National Deposit Friendly Society for upwards of 20 years with satisfaction to the patients, the doctors, and the society, should be a sufficient reply to the objections raised by Dr. Seville in your issue of March 30th. As long as the majority of the profession are worthy and honourable men and women, unnecessary attendance would not bulk largely; moreover, such a dishonest practice could not be carried out extensively without collusion with the patients, which might lead to unpleasant consequences. As to the bookkeeping difficulty, the system of the National Deposit Friendly Society is simplicity itself, and ledger work is reduced to a minimum. Having for many years, when in active practice in London, attended members of the National Deposit Friendly Society, I do not speak without knowledge of the system of payment for actual work done. I am, Sir, yours faithfully,

Callington, Corwall, April 2nd, 1912. GEORGE BROWN.

THE LEGISLATIVE CONTROL OF PATENT MEDICINES.

(FROM A CORRESPONDENT.)

THE Government's promise to appoint a Select Committee to inquire into the subject of the sale of "patent medicines" draws attention to a feature which is probably as ancient as the human race itself. But it is only during comparatively recent years that this form of enterprise has made such gigantic strides as to become a special branch of industry, important enough to be included as a separate item in the trade returns of some countries. Its possible influence on the national health and wealth has, however, not been allowed to pass unchallenged, as is apparent from the provision of special legislation during recent years in several countries for dealing with the evils attending the unrestricted sale of nostrums. The whole question bristles with difficulties, and so far no country can boast of having provided an effective solution. The failure to do so lies less in the difficulty of framing adequate laws than in the attitude of the public, which only too often shows a wilful disregard of the measures passed for its benefit, and thus defeats the object of the legislator. A consideration of the points involved will illustrate a few of the difficulties which this problem presents.

Consideration of Problem.

Until the nationalisation of the medical service, promised us in the Socialist state, is an accomplished fact, man will continue to resort to the use of certain household remedies in order to alleviate certain symptoms. These remedies are the outcome of the knowledge, transmitted through centuries, of the association of certain symptoms with distinct forms of treatment, and the State can do little to prevent this aspect of self-drugging as long as it is restricted to comparatively harmless agents. The pharmacist who has succeeded in elaborating a special form of some nauseous drug, thereby rendering it more palatable and really enhancing its medicinal value, has done a service to his fellow men, and the same applies to those chemists who have enriched our materia medica by valuable discoveries. The man who places on the market a product of this kind, with full particulars of its nature and composition, is justified in reaping some reward for his trouble.

But the subject assumes another aspect when it is no longer the purchaser who demands a definite substance, but the seller who suggests a certain course of treatment or the use of some remedy of unknown composition as a "sure cure"

for the affliction described by the client. The advertising columns of most newspapers contain abundant proof of this side of the question of self-drugging, against which are directed the measures adopted by various States.

In spite of compulsory education and a ubiquitous press recording the latest achievements of science, man is still imbued with a hankering after the mysterious, and it is this credulity which explains the persistence of a flourishing trade in "specifics" for tuberculosis and cancer. The greater number of secret preparations on the market are composed of well-known ingredients possessing certain distinct properties; indeed, most of these ingredients are in universal use as household remedies. The only difference is that instead of being aware of the nature of the article purchased, and paying a corresponding price, extraordinary virtues are attributed on the label to the contents of the bottle, and in return for a sum out of all proportion to the value of the drugs the purchaser is hypnotised into believing that the mysterious combination is endowed with special properties. These preparations may be in themselves harmless, and even in some cases may be productive of good. The evil, however, lies in the methods employed to effect their sale.

Medicine Stamp Duty Acts.

Up to the present the British Government has maintained a purely business attitude with regard to the sale of patent medicines, and the national revenue benefits not inconsiderably thereby, a fact which has often been held up as a desirable example to follow to the ministers of finance in foreign countries, while at home many reproach the Treasury for participating in this nefarious traffic. The idea of taxing medicine is by no means new. In a letter of Dr. John Arbuthnot to Swift, dated June 26th, 1714, he mentions that Martinus Scriblerus is to propose to raise money for the Government by a stamp upon blistering plasters and meliot by the yard, and the laws at present in force in England were passed in the years between 1802 to 1812. These deal merely with the liability to stamp duty, and otherwise do not affect the actual sale of such preparations. According to the Medicine Stamp Duty Acts, a preparation is liable to duty on any one of the following grounds: (1) If the manufacturer claims to possess a secret method for the preparation of the article, or sells it under the authority of Letters Patent; (2) if a claim is made to the exclusive right to making such a medicine—for instance, the designation "Smith's liver pills" renders the preparation dutiable; and (3) the use of any public notice or advertisement, handbill, or label holding out or recommending to the public any preparation as "beneficial to the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint incident to or in any wise affecting the human body."

The above definitions of what constitutes a dutiable medicine are fairly comprehensive, and it is apparent that the dutiability arises solely from the statements advanced by the manufacturers in connexion with their articles, and in no way from the nature of the contents, or of the real therapeutic action of the latter. The medicine stamp itself has to be affixed to every container of a dutiable medicine, and the rates of duty vary according to the sale price of the preparation. They are at present as follows:—

Sale price up to 1*s.*	Duty	1½*d.*
,, from 1*s.* to 2*s.* 6*d.*	,,	3*d.*
,, ,, 2*s.* 6*d.* to 4*s.*	,,	6*d.*
,, ,, 4*s* to 10*s.*	,,	1*s.*
,, ,, 10*s.* to 20*s.*	,,	2*s.*
,, ,, 20*s.* to 30*s.*	,,	3*s.*
,, ,, 30*s.* to 50*s.*	,,	10*s.*
,, over 50*s.*	,,	20*s.*

Quantity of Patent Medicines Sold.

Some idea of the vast number of "patent medicines" sold annually in England, Wales, and Scotland—for the Acts do not apply to Ireland—may be gauged from the fact that in the financial year 1909–10 this form of taxation yielded a total revenue of £313,114, and in 1910–11 of £325,646. The latest available statistics referring to the sale of the single denominations of stamps is for the year 1907–08, from which we gather that of the 1½*d.* value no less than 33,037,202 stamps were sold, of the 3*d.* value 7,565,822, of the 6*d.* value 1,002,549, while of the 3*s.* value 11,308 were purchased, thus showing that an equal number of proprietary remedies selling at prices ranging from 20*s.* to 30*s.* found a market in Great Britain.

In addition to the tax levied upon each single article of this description, makers or vendors of patent medicines have to take out an annual licence costing 5*s.* In the financial year 1909–10, 39,113 licences were taken out in England and Wales, and 3300 in Scotland, bringing in a return of £10,603 5*s.* to the Treasury.

It will probably come as a surprise to many to learn that as much as £1 or over should be paid for a patent medicine. It must be remembered, however, that a very great number of this class of remedies are sold by so-called medical institutions, the first step being to get into communication with the dupe, who is required to fill up a form detailing his symptoms, and in return for the first fee receives some medicine and advice. A persistent correspondence is kept up, generally limited to the efforts of the "personal friend" who represents the institution, or is an "eminent medical man" according to his own description, with the object of inducing the client to try the "stronger," or "complete," course of treatment, which, of course, costs considerably more.

Action taken in the United States.

In America, where the "medicine-hunger" is as prevalent as in England, with the difference that the maker shows an inclination to exhibit even greater flights of imagination in pushing his ware, the first active steps taken against certain obnoxious features of this traffic date from the passing of the Federal Food and Drug Act of 1906. The aim of this law is to ensure that the "label shall tell the truth," and to prevent misbranding. Thus medicines containing alcohol and a number of specially mentioned potent or habit-forming drugs (morphine, cocaine, acetanilide, &c.), must bear an indication of the quantity of drug of this kind present in the mixture. In addition to this provision, intended to safeguard the public from the unsuspected use of certain drugs likely to prove injurious to health if injudiciously employed, the Act empowers the authorities to take proceedings against manufacturers of patent medicines who misbrand their goods. Thus an article called "Brane-Fude" was declared to be misbranded on the grounds that there was no such thing as a "brain food," and in consequence of the active steps taken to enforce this provision of the law, many manufacturers have toned down their claims regarding the virtues of their products. Unfortunately a recent decision of the court has negatived this view by maintaining that the provisions of the law do not extend to the tenor of the therapeutic claims advanced, and that the term "misbranding" only applies to instances in which preparations containing alcohol, morphine, &c., do not bear a statement to this effect on the label. A new Bill is to be introduced shortly to restore the original interpretation of the Act by including fraudulent therapeutic claims as well as increasing the number of drugs concerning the presence of which a statement must be made on the label.

A very interesting lesson may be learnt by comparing the statements made in the publications intended for the American market and those for use in Great Britain of some of the notorious firms doing a brisk trade in both countries. It will be found that where England is concerned the drug exerts a much more marvellous effect than would appear to be the case on the other side of the Atlantic. To further strengthen this Act the postal authorities are empowered to forbid the use of the mails to persons convicted of having used them for fraudulent purposes.

Course adopted in Austria.

In Austria a different course is adopted, and there, before any remedy put up in a form ready for sale is allowed to be placed on the market, the permission of the authorities must be first obtained, and the latter decide whether it may be sold without restriction or only upon the production of a qualified medical man's prescription. In the case of foreign firms desiring to place their goods on the Austrian market, the application for permission must be made through an Austrian firm which is to act as the responsible representative of the manufacturer, who himself has to pay the penalty if he transgresses any of the laws regulating the sale of medicines. This course is adopted, as otherwise the Austrian authorities would be powerless to deal with a firm situated outside the country. From time to time a list of the preparations allowed to be sold is published, as well

as of those the sale of which has been forbidden, and the authorities take steps to see that no infringements occur.

Position in Germany.

In Germany, as in practically all continental countries, the sale of remedies of all kinds is vested in the pharmacies, and the pharmacist is hedged in by a vast array of regulations, particularly aimed at preventing the unrestricted sale of potent drugs, or even the repetition of prescriptions containing certain substances. In this way the public is unable to obtain possession of all the more potent drugs except upon a physician's prescription; thus without a prescription it is impossible to obtain in Germany even the most minute quantity of morphine, cocaine, or of the more powerful hypnotics, or of the popular cures for headaches, such as acetanilide or phenacetin; and to have a prescription containing some of these drugs repeated the signature of the doctor must be obtained before each repetition. However, in spite of these stringent measures, it is estimated that at least £1,500,000 are spent annually by the German people in the purchase of secret remedies, and this question has now for many years engaged the attention of the Imperial Government as well as of the authorities of the separate States.

The line of action so far adopted has been to deprive the seller or manufacturer of the main foundation on which the sale of these articles is based—advertisement—and by warning the public against the use of certain remedies marketed as patent medicines. A list of secret remedies has been drawn up by the Federal Council, and it is forbidden to advertise any remedy mentioned on the list, to make use of any testimonials, expressions of thanks from persons presumably cured by the use of the remedy, or any utterances or claims regarding the supposed properties of the article. At the same time, the addition of any advertising material to the package in which the medicine is contained is forbidden, and in selling it it is also forbidden to supply any advertising material dealing with its effects and virtues. To combat more effectively the sale of some of these secret remedies it is even required that they shall not be sold except upon a medical man's prescription, to be renewed also prior to each further purchase.

This measure naturally only affects a restricted number of preparations included in this list, and is acknowledged to be but an attempt to suppress the sale of some of the better known proprietary medicines at present sold in Germany. A change of name is, however, sufficient to defeat the object of this law, and in the place of advertisements in the papers the manufacturer finds other means of bringing his preparation to the notice of the general public. Indeed, the medicine hunger of the public is so great that there is quite a brisk trade in the introduction of secret remedies into the country, usually through Austrian or Swiss dealers, who make a speciality of the manufacture of obscure remedies of the balsam kind. Curiously enough, in their whole appearance these remedies savour strongly of the mediæval medicines, or of the so-called Dutch remedies still so greatly in use in South Africa. The German Government turns this branch of trade to account by the provision of a special charge in the Customs tariff for secret remedies, which pay import duty at the rate of £25 per 100 kilogrammes, or equal to a charge of 2*s.* 3½*d.* per pound; this duty is levied on the gross weight of the article, so that in many cases the duty is really paid for the heavy bottle in which the preparation is put up. This explains, too, the high charge for many well-known British proprietary medicines sold in Germany. A medicine is treated as a secret remedy by the Custom House authorities if the sale price exceeds the cost of the same ingredients dispensed as a prescription and charged for according to the rates of the official German prescription tariff, or if any claims are made in the advertising material included regarding the curative properties of the remedy.

Special interest attaches to the efforts taken by the health authorities of various German towns to suppress the sale of many quack remedies. As soon as it is known that a certain worthless preparation is being exploited the authorities publish a "warning" in the daily papers against the use of the article. These "warnings" usually take the form of a statement of the analysis of the preparation in question, with a few remarks concerning its true therapeutic effects and their relation to the claims made by the seller, and also a statement regarding the real cost of the ingredients. These "warnings" are usually published in the advertising columns of the press in a manner likely to strike the reader's attention.

New Anti-Quackery Legislation in Germany.

In spite of all these efforts, the authorities have to acknowledge a defeat, and the anti-quackery law introduced into the Reichstag two years ago, but which was withdrawn by the Government last December while under discussion in commission, contained more definite proposals for dealing with the evil.

In the first place, a central commission is to be appointed which will consider the advisability of permitting the sale of each secret remedy prior to its introduction on the market. This body will have to take into consideration whether the remedy is launched merely to exploit the public, or whether its unrestricted sale is likely to prove injurious to health; the manufacturer will be given an opportunity to defend his preparation should an adverse decision be formed. Transgressions of this law, such as advertising a prohibited article, will be punished with imprisonment up to six months and a fine not exceeding £75, or either of these forms of punishment; in this connexion it is interesting to note that not only the advertiser, but also the publisher, will be held responsible for the contents of the advertisements appearing in his publications. The creation of a controlling body of this kind will do much to prevent the sale of secret remedies of an obnoxious character, but it will fail to affect the traffic which goes on unheeded by the general public, or actively assisted in its spread by devotees.

The disclosure of the formula is compulsory in some German states, where it is required that the exact contents of every proprietary preparation should be stated in German on the package, and in addition this formula has to be included in the public advertisements referring to the preparation. This may be productive of some good, but on the whole the information does not convey much to the purchaser, who is not in a position to form an opinion as to the therapeutic activity of the ingredients in the ailments for which the preparation is recommended, nor is he able to judge of their relative innocousness; on the contrary, the disclosure of the formula often acts as an extra attraction, and the public may continue to indulge in the specific, but instead of purchasing the original article it resorts to a substitute made up in accordance with the published recipe.

Remedies for "Female Complaints."—Action under Food and Drugs Act.

There remains another point calling for stringent measures in the interests of the nation at large. It requires no great effort to imagine the object underlying the advertisements dealing with remedies for "female complaints" or inserted by the "nurse willing to give advice" in certain cases. This veiled phraseology is easily interpreted by the would-be dupes, too often with disastrous consequences. This detestable traffic should be repressed with a stern hand.

In conclusion, it may be mentioned that although England is unprovided with legislative measures directed against the abuse of secret remedies, in one case at least an existing Act has been applied, and with a successful issue. A vendor of quack medicines sold a specific cure for diseases of the liver. Upon analysis it was discovered to be composed of an acidified glycerine solution, devoid of any specific action of the kind advertised. The local medical officer of health took proceedings against the vendor under the Sale of Food and Drugs Act, Section 6, which makes it an offence to sell to the prejudice of the purchaser any food or drug not of the nature, substance, and quality demanded, and a conviction followed. Apparently this prosecution stands alone, yet it gives a lead for the introduction of any further public measures which may be found desirable without resorting to special legislation.

BRISTOL.

(FROM OUR OWN CORRESPONDENT.)

"Classification" of Sick Paupers in Bristol.

THE Bristol guardians have come to a decision of considerable importance in voting for the alteration and extension of one of their three institutions, the Southmead workhouse, to meet the need for a better classification of their workhouse and infirmary inmates. It has for some time been clear that the existing state of affairs, under which aged

persons, imbeciles, epileptics, consumptives, and cases of acute illness are imperfectly classified in three institutions (Eastville, Stapleton, and Southmead), must be terminated. Various schemes brought forward in the past proved too expensive for adoption, and the whole matter hung fire for some time pending the publication of the report of the Poor-law Commission. This report, when it appeared, gave a fresh impetus to the reform movement by its advocacy of the principle of classification. Plans have accordingly been prepared, with the help of the Local Government Board architect, for the conversion and extension of the Southmead workhouse into an infirmary capable of receiving 544 "acute sick" cases. This will include 210 beds for men, 252 for women, 28 for lying-in cases, and 54 for children. The building will be arranged in two-storey pavilions, and the probable cost will be £50,000. The existing buildings are being used largely for the treatment of less advanced cases of consumption. Southmead lies in the northern quarters of the city, and is a little difficult of access, but it stands high, and ought to constitute a good site for such an institution.

British Medical Benevolent Fund, Bristol Branch of Guild.

The inaugural meeting of this branch was recently held in the board room of the Bristol Royal Infirmary. Mrs. Hugh Stack, the organising secretary, said she already had 55 members, and 52 associates, and would be able to send over £30 to the funds in London. Mrs. Furnivall and Lady Owen also spoke, the former explaining the objects of the Guild and the practical nature of its activities.

Legislation for the Care and Control of the Feeble-minded.

The Education Committee of the Bristol City Council has passed a resolution, to be forwarded to the Government, urging legislation along the lines recommended in the report of the Royal Commission on the care and control of the feeble-minded.

Bristol Eye Dispensary.

At the annual meeting of this institution the report stated that the institution had been in existence 100 years. The number of new patients during the year was 3065, the largest on record. The increase in refraction cases was remarked upon; the majority of such patients are young factory hands and school children. Mr. A. W. Prichard, senior surgeon, commenting on this increase in the work, said that it would be necessary for Bristol to follow the example of other large towns and education authorities by appointing a paid ophthalmologist to examine and prescribe glasses for school children with errors of refraction. The accounts, presented by the new treasurer, Mr. E. H. Caley, showed that the adverse balance of £52 with which they had started the year had been reduced to £46. An increase in the subscription list is, however, urgently necessary.

Notification of Acute Poliomyelitis and Cerebro-spinal Fever.

The Bristol city council recently decided that the provision for notification of acute poliomyelitis and cerebro-spinal fever, adopted temporarily six months ago, shall be continued permanently.

April 9th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Scottish Medical Insurance Council.

THE Council has been summoned to meet on Friday afternoon, April 12th, in the hall of the Royal College of Surgeons, Edinburgh. In view of the importance of the business members are requested to stay in Edinburgh over night, so that unfinished business may be taken on Saturday morning. A long agenda has been drawn up by the temporary executive and circulated to the members of the Council. Meanwhile the Scottish Commission has offered seats on the Advisory Committee to six medical men in Scotland, four of whom are general practitioners. It will be interesting to see what the Scottish Council will say to this.

Edinburgh Royal Infirmary: The Retirement of Dr. Byrom Bramwell.

At a meeting of the managers of the Edinburgh Royal Infirmary on April 1st the following minute, submitted by Dr. John Playfair, was unanimously adopted: "The managers wish to express to Dr. Byrom Bramwell their sincere regret that his term of office as ordinary physician to the Royal Infirmary of Edinburgh has now expired, and that they will thus be deprived of his esteemed and valuable services. They wish further to offer to Dr. Bramwell their heartfelt thanks for all he has done for the institution and the many patients who have been under his care. They remember that it was in 1882, when he was appointed pathologist, that Dr. Bramwell first became officially connected with the infirmary, and that therefore for the long period of 30 years he has been freely giving of the best of his time and ability for the advancement of the objects and aims of this institution in ministering to the needs of the sick poor and the teaching of medical science and practice. The managers are well aware that by his unceasing devotion to his profession, his great ability and originality, his acuteness and power of observation, Dr. Bramwell has made himself one of the leaders of his profession, and has placed himself in the front rank of his professional brethren both at home and abroad, and they gratefully acknowledge the many and lasting benefits the Royal Infirmary has derived from the devoted and ungrudging services of such a distinguished physician. The managers assure Dr. Bramwell of their continued regard and esteem, and they sincerely hope he may be long spared to carry on his work of beneficent usefulness to his fellow-men." In appreciation of his long and highly valued services the managers have appointed Dr. Bramwell a consulting physician to the Royal Infirmary, and it is the intention of his colleagues to entertain him at a banquet on May 17th. The arrangements for this are in the hands of Professor Littlejohn and Dr. Haultain.

The Association of School Medical Officers for Scotland.

The annual meeting of this association was held in the offices of the Glasgow School Board on March 30th, at which Dr. E. T. Roberts, in his presidential address, gave a *résumé* of the work done during the past year and made proposals for the next session. The reports of the general secretary and treasurer showed a membership of 90 and a balance of £7 for the year's work, while the librarian reported that many school medical officers had not as yet forwarded copies of their reports for the library. Previous to the annual meeting a most interesting demonstration was given in Dovehill Public School in connexion with the formation of special classes for semi-deaf and semi-mute children. Dr. J. Kerr Love outlined institutional and day-school treatment, and discussed the classification of such children, dealing minutely with the educational side of the question. The various progressive stages of educational advancement in such children were exhibited in the cases shown by Miss Douglas. The members of the association inspected the Dovehill Cooking Centre, where the system adopted in Glasgow was fully explained. The next meeting of the association is to be held in Edinburgh on May 18th, the subject for discussion being the Organisation of the School Medical Service in Town and County Areas.

Honorary Degrees at Glasgow University.

The Senate of Glasgow University has just issued a list of the names of those on whom it is intended to confer the honorary degree of LL.D. on Foundation Day, June 25th. Two medical men are included the list—Sir Hector C. Cameron, M.D., Emeritus Professor of Clinical Surgery in Glasgow University, and formerly Assessor of the Senate and the University Court; and Mr. Donald J. Mackintosh, M.V.O., M.B., C.M., medical superintendent of the Western Infirmary, Glasgow, widely known as an expert in hospital instruction and administration.

Medical Officer of Health of Dumbartonshire.

At its meeting last week the Dumbarton county council appointed Dr. Thomas Lauder Thomson, senior assistant medical officer for the county of Ayr, to the vacancy in Dumbartonshire caused by the appointment of Dr. J. C. McVail to the Commission under the Insurance Act. Dr. Thomson is a graduate of medicine of Edinburgh University, and holds the diploma for public health from Edinburgh and Glasgow.

Payment of Stevenston Medical Officers.

Stevenston parish council has decided to advertise for two medical officers for the landward portion of the parish and the part situated in the burgh of Saltcoats, at salaries of £35 and £20 respectively. For the landward medical officer this works out at the rate of 1*s* per visit, while for the

medical officer for the Saltcoats portion it works out at 7*d.* per visit.

Montrose Infirmary's New Charter.

At the monthly meeting of the managers of the asylum and infirmary board, held in Montrose on April 3rd, the convener of the infirmary house committee reported, in connexion with the new charter for the Royal Infirmary, that the special committee appointed by the board had suggested that three representative members (two from the town council and one from the parish council), nine members of a general committee of contributors, and nine coöpted members, together with the present members of the asylum and infirmary board, should form the board under the new charter. The meeting agreed to discuss the proposals next month.

Aberdeen Chemists and Druggists and a Closing Order.

At a recent meeting of Aberdeen chemists and druggists the question of applying for a closing order was discussed. There was considerable divergence of opinion, some urging that shops in the city should be closed at 8 o'clock; others contending that in this event a workman who had to visit his Friendly Society medical officer after 6 P.M would have difficulty in getting his prescription made up before closing time. 26 members voted for applying for a closing order and 13 against doing so. It was eventually decided to appoint a committee to take a plebiscite on the subject throughout the pharmaceutical establishments.

Professor Matthew Hay and Daylight Saving.

Professor Matthew Hay, writing to the press on the subject of phthisis, has appealed for a better regulation of the hours of work of young persons. As one who favours the idea underlying the Daylight Saving Bill, and last year gave effect to it in the Public Health Office by altering the hours of attendance during the summer months to 8 A.M. to 5 P.M. in place of 9 A.M. to 6 P.M., he publicly puts forward the suggestion, made in each of his last two annual reports, that at least certain kinds of offices in the city, especially law, accountant, banking, and insurance offices, might consider the feasibility during the approaching summer of beginning and ending the day's work an hour earlier, without any change of the hands of the clock as is proposed under Mr. Willett's Bill. No body of young men and women suffers so much in health as do clerks and typists from the sedentary nature of their occupation. It would greatly help to counteract the evil effects of the confining nature of their duties if in summer they could get away an hour earlier and have more time for open-air recreation. Much of the high mortality from phthisis at later ages, he considers, is only the conclusion of a disease that takes root in the earlier years of life, when the whole body is affected by a consuming thirst for fresh air and outdoor recreation.

April 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Trinity College Medical School Bicentenary Celebrations.

THE bicentenary celebrations of the Trinity College Medical School will take place in the first week of July. Trinity College is receiving the active coöperation of the Royal Colleges of Physicians and Surgeons in Ireland. Invitations have been sent to some 300 learned bodies, at home and abroad, and a large number of acceptances have been received. If any Dublin graduates have not received the circular sent to all medical graduates of Dublin whose addresses could be found, inviting their presence at the celebrations, the honorary secretaries of the Graduates Committee will be pleased to hear from them. A history of the medical school, written by Dr. T. Percy C. Kirkpatrick, will be published before the celebration.

The National Insurance Act.

A deputation representing the Dublin hospitals waited last week on the Insurance Commissioners to put before them certain points as to the influence the Act is likely to have on the hospitals of Dublin. It was represented that there would probably be a large falling off in the voluntary subscriptions given to the general hospitals by employers of labour, while there would be no lessening of the demand for hospital assistance. It was suggested that a capitation tax should be placed on the Approved Societies and Insurance Committees, to be distributed among the hospitals according to the work done. Sir John Moore referred to the imperilling of the Dublin Medical School by the Act. An important point with regard to the maternity benefits was urged by Dr. Henry Jellett, Master of the Rotunda Hospital. At present some 3000 to 4000 patients a year are attended in the Dublin maternities for their confinements. At least as many more are attended in their own homes by the students and pupil nurses of the maternities. Under the Insurance Act the maternity benefit will only be paid to women who remain at home and are attended by a qualified practitioner or a certified midwife. This condition directly affects the great majority of the 7000 women attended by the Dublin maternities. It will probably deter many from seeking the aid of the maternities, and not at all improbably may so deplete the hospitals of clinical material as to render obstetric teaching difficult or impossible. Moreover, the women will not receive as good attention at home as they now do in hospital. The Master of the Rotunda urged on the Commissioners that they should make it clear to the women affected that in case they entered hospital the benefit would be paid in full to their dependents; and that in case of confinement at home attendance by a student or pupil nurse under the direct supervision of the hospital officers should be regarded as attendance by a qualified person. The question of the insurance of hospital employees, nurses, and probationers was discussed. The Commissioners promised to take the various points into consideration and to discuss them with the deputation at a later date. Within the past few weeks the Insurance Commissioners have requested various medical societies and corporations in Ireland to suggest the names of suitable medical men to be offered seats on the Advisory Committee. The Conjoint Committee of the Irish and British Medical Associations has nominated eight gentlemen, two from each province of the country. Some other medical societies, such as the Royal Academy of Medicine and the Ulster Medical Society, have expressed their acquiescence in the nominations of the Conjoint Committee, and it is probable that this line may be followed by the universities and medical corporations. The list of nominations has been, however, subjected to some criticism in that it too exclusively represents the Poor-law service. Only one name of the eight is that of a medical man not engaged in Poor-law work, and there is no one in the list who can specially represent the interests of the great voluntary hospitals of Dublin and Belfast.

Sanitary Condition of the Primary Schools.

For many years the sanitary condition of the national schools of Ireland has been very unsatisfactory. In the recently issued report of the Commissioners of National Education they state that there are many cases "in which the existing buildings were so unsuitable and insanitary as to be a source of positive danger to the health of the pupils," and, again, that in 225 cases, "the health of both teachers and pupils was being injured in the existing schoolhouses." The Commissioners have made repeated applications to the Treasury for funds to remedy this state of affairs, but the response has been inadequate. The council of the Dublin Sanitary Association, commenting on the matter, remarks:—

> It should be remembered that the existence of many of these schools depends on the "grant in aid" which is given by the Commissioners, and that such grant should be awarded only if the schools fulfil the requirements of the Board. Under these circumstances, the Commissioners appear to be themselves directly responsible for the efficiency and sanitary state of all those schools which receive grants from them. This council consider that under no circumstances should children be permitted to attend a school when such attendance is likely to prejudice their health. If the Commissioners were to adopt this view it is probable that many of the schools in the country would be closed, and a state of affairs brought about which would almost certainly create sufficient public opinion to compel the Treasury to place funds at the disposal of the Commissioners to rectify the present condition of the schools. The council also notice with regret that nothing is said of the necessity of medical inspection of children attending school. Since school attendance has been made compulsory the importance of this inspection cannot be over-rated. Parents should not be compelled to send their children to a school where they may have to associate with others suffering from disgusting, if not dangerous, infections and contagious diseases.

Appointment of Physician to the King.

The King has been pleased to appoint Sir John William Moore, M.D. Dub, D.Sc., as his Honorary Physician in

Ordinary in Ireland, in succession to the late Sir Francis Cruise. Sir John Moore is senior physician to the Meath Hospital and a Past-President of the Royal College of Physicians of Ireland.

Sir Almroth Wright and the Freedom of Belfast.

It was unanimously decided on April 1st to confer the freedom of the city of Belfast on Sir Almroth Wright, who is the son of a well-known Belfast clergyman. Sir Almroth Wright was educated at the Royal Academical Institution of Belfast before proceeding to Trinity College, Dublin.

Vaccination in Belfast.

Some three weeks ago a deputation from the Anti-vaccination Society urged the Belfast board of guardians not to proceed against those who objected to compulsory vaccination of their children. On April 2nd a deputation from the Ulster Medical Society and the Belfast Division of the British Medical Association, consisting of Sir William Whitla, Dr. H. L. McKisack, Dr. J. R. Davison, and Dr. R. J. Johnstone, with a deputation from the public health committee, Dr. Robert Thomson (chairman) and Mr. H. W. Bailie (medical officer of health), as well as Dr. A. G. Robb (the board's own medical officer), appeared before the guardians and urged them very strongly not to forego their powers of prosecuting those who refused to have their children vaccinated. After the deputation had withdrawn, a letter was read from the Local Government Board, pointing out that any slackness on the part of the guardians in discharge of their statutory duty in the matter would expose the infant population to the risk of contracting small-pox and be a source of serious danger to the public health. The whole question was adjourned for a fortnight.

April 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A "Cold" Congress.

THE French Association du Froid is at present organising its eleventh National Congress, to take place at Toulouse from Sept. 23rd to 25th, 1912. A special section of the applications of cold in medicine has been decided on, seeing the great interest that attaches thereto. This section will include: Cryologic methods (cold storage) as applied to the preservation of cadavers in hospitals, in the Faculties of Medicine, and in the morgues. The applications of cold in laboratory methods: the freezing of histological specimens; the rôle of cold in the preservation of serums; its employment in the preparation of organic extracts; the toxicity of serums; the influence of low temperatures. The preservation of vaccines by cryologic methods will also be considered, as well as the action of low temperatures on microbic cultures. Applications of cold to therapeutics: carbonic-acid snow in the treatment of dermatoses and of leprosy; the action of cold on living animal tissues and on the hygiene of dwellings.

The Virulence and Contagiousness of Tuberculous Perspiration.

M. Poncet gave a lecture, on March 28th, at the Academy of Medicine in his own name and that of M. Miery, of Lyons, on the work of the latter observer in establishing the fact that the perspiration of the tuberculous is virulent and contains the tubercle bacillus. This virulence has been determined in 30·76 per cent. of tuberculous subjects affected with surgical lesions, tuberculous rheumatism, and tuberculous peritonitis—that is, among those with inactive or only feebly active lesions. In a still greater number of cases the presence of bacilli has been demonstrated in the perspiration of the actively tuberculous. This elimination of the bacilli in the perspiration is connected with the frequently septicæmic nature of the tuberculous infection. In short, the sweats of the tuberculous may be considered as crises of bacillary elimination. From this it may be concluded that the perspiration is a real agent of direct or indirect (e.g., by soiled linen, clothes, &c.) contagion. The necessity for disinfecting all objects that have been contaminated by the sweat of the tuberculous, and of insisting on a separate bed for tuberculous patients, is manifest according to these observers.

The Troubles at the Faculty of Medicine.

It is unnecessary to recount all the troubles that have of late attended the courses of M. Nicolas, professor of anatomy at the Faculty of Medicine. One of the causes of these troubles, according to the students, was the suppression of the post of director of practical studies (*chef des travaux pratiques*). A decree of March 24th annuls from Nov. 1st, 1912, the decree of July 16th, 1900, relating to the practical school of the Faculty of Medicine of the University of Paris. This decree is followed by a ministerial ordinance relating to the functions of the chief director of anatomical studies (*chef des travaux anatomiques*) at the Faculty of Medicine of the University of Paris, for these studies will in future be supervised by a director. This director is appointed by a ministerial ordinance for five years, subject to continuance for periods of like duration, if so decided by a secret ballot by the Council of the Faculty of Medicine. The director is in charge of the administration of the practical school, of the *personnel* of the service, and of the practical instruction in anatomy, under the direction and control of the professor of anatomy, with the approval, according to the general regulations, of the Council of the Faculty. He has under his orders the prosectors and assistants in anatomy. The competition for the post takes place at the session of the Faculty. At the Paris Faculty of Medicine these functions are incompatible with those of surgeon, physician, or accoucheur of the hospitals. The remuneration is 6000 francs. Another decree appoints a competition for this post on July 1st, 1912, the entrance for which will close on June 15th, 1912, at 3 P.M. It is to be hoped that this decree will smooth over the misunderstandings of the last few months.

General Anæsthesia.

At the Société de Chirurgie on March 27th M. J. L. Faure stated that during the past six years he had induced general anæsthesia by Schleich's method in nearly 2000 cases. Schleich's mixture consists of ether 60 parts, chloroform 20 parts, and ethyl chloride 10 parts. At first he used Ricard's apparatus, but has since discarded it, for its rate of supply is insufficient, and anæsthesia cannot always be obtained with it. For two years he has used only the apparatus made according to the directions of M. Gauthier, of Luxeuil, which has the advantage of furnishing a more considerable flow. Schleich's mixture presents fewer dangers than chloroform, and in none of his cases has M. Faure had any serious alarms. Its great advantage is that it induces complete anæsthesia without provoking vomiting, save in exceptional instances. Nevertheless, in patients whose liver is affected, M. Faure prefers ether (administered with Ombredanne's apparatus) to Schleich's mixture. M. Chaput asked M. Faure to exhibit Gauthier's apparatus, for he himself, using Schleich's mixture without it, had found the anæsthesia untrustworthy and often accompanied by respiratory trouble.

Anthrax.

A decree of the Minister of Labour and of Social Prevision has issued the following warning notice, which must be posted up in all establishments in which the *personnel* is exposed to infection with anthrax:—

Anthrax is a very serious disease, but one which may be cured if treated immediately. It begins with a little pimple, which must be cauterised within 24 hours. Unless treated anthrax may cause death in a few days. If you have a pimple, a cut, an excoriation, or the like you must at once advise the management. See the medical man at once if you have a pimple. If you have the least abrasion, get it dressed at once, or it may give entrance to dust which may contain the microbe that can kill you. Be suspicious of dusty goods that you have to handle. Clean yourself carefully, especially your hands, before eating and drinking, for you can take in the disease by the mouth. N.B.—Dr. ——, who lives at ——, has charge of this establishment in regard to the prevention and treatment of charbon infection. A first-aid package is kept in the establishment.

A Victim to Duty.

The Official Journal of April 3rd published the nomination for the Legion of Honour of Dr. Veau, surgeon to the Paris hospitals since 1906. He was assistant to Dr. Jalaguier, surgeon to the Hospice des Enfants Assistés, when he contracted diphtheria on Oct. 25th, 1911, during the epidemic which was then raging in the institution, which almost caused his death by its numerous relapses. He is now, however, well again. The Carnegie Foundation at its last session awarded to Dr. Veau its gold medal.

April 9th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The Prevalence of Rabies.

RABIES is prevalent in various parts of the United States. In Long Island several cases in horses have been recently reported. In New Jersey somewhat of a panic is said to exist from the presence of presumably infected dogs. In California the State Laboratory reports 240 examinations for rabies, of which 80 proved positive. Of 68 persons bitten, 5 died from hydrophobia. The report urges the systematic muzzling of dogs.

Death Certificates.

The right of the New York City Board of Health to insist that certificates of death must be signed by a legally qualified medical practitioner has been upheld by the State Court of Appeals sustaining a decision of the lower courts.

Nurses' Charges in New York City.

The customary charges of trained nurses in New York have hitherto been $25 a week. The organised nurses of the city have now decided, however, to charge at the rate of $4 a day, on the ground of the increased cost of living and the frequent misunderstandings between patient and nurse as to the proper charge for a part of a week.

Immigration through the Port of New York.

Dr. Joseph O'Connell, health officer of the Port of New York, asks for an appropriation of $400,000, necessary, in his opinion, to bring his department up to a proper state of efficiency. Owing to the Turkish-Italian war immigration to the United States has greatly increased—one of the last steamers from Italy carried 1588 steerage passengers. Such an influx so early indicates, according to Dr. O'Connell, a great increase in the volume of immigration from that country for the remainder of the year.

Resignation of Dr. Wiley.

Dr. Harvey W. Wiley, chief of the Bureau of Chemistry of the United States Board of Agriculture, has sent in his resignation. It is stated not only that Dr. Wiley has been forced to resign by the machinations of those interested in preventing the enforcement of the pure food and drug laws, but that his efforts to make these laws effective have been constantly thwarted by certain of his colleagues in the Department of Agriculture.

Illiteracy Test for Immigrants.

A Bill to be brought before the National House of Representatives would exclude illiterate immigrants from the United States. It provides that all aliens over 16 years of age who are physically capable of reading, but cannot read English or some other language, shall be excluded as undesirable immigrants. Admissible immigrants or immigrants already legally admitted, however, may bring in their fathers or mothers, grandfathers or grandmothers, who are over 45 years of age, their wives, and such of their children as are under 16, being otherwise admissible, whether such relatives can read or not. An exception is made in the Act in favour of immigrants, otherwise admissible, who are fleeing from religious persecution.

A New Dispensary Building in Philadelphia.

The Medico-Chirurgical Hospital of Philadelphia opened recently a new dispensary building.

The Common Drinking Cup.

A law has just gone into effect in the State of Missouri adding that State to the 22 in which the use of common drinking cups, roller towels, and common brushes and combs in public places and railway trains is prohibited.

Health Inspectors in San Francisco.

The health board of San Francisco has decided that the majority of the sanitary inspectors of the city must be qualified medical men and must devote the whole of their time to the work. The salary of these inspectors has been raised from £25 a month to £40.

March 30th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Public Health Legislation.

A BILL to make further provision relating to public health has been published during the month, and a few days ago it was introduced into Parliament by the Minister of the Interior, General Smuts. As anticipated, it resembles in many respects the measure which was brought forward last year and which was dropped by the Ministry when it became apparent that the sense of the House was against the proposals of the Government as outlined in the measure.

The Bill provides for the abolition of the offices of medical officer of health for the colony of Cape of Good Hope, the Transvaal, and Orange River Colony, and those of the assistant medical officer of health for the colony of the Cape of Good Hope and of the health officer for the colony of Natal. In addition it abolishes the Board of Health in Natal and abrogates certain advisory functions in connexion with public health that are vested in the Medical Council in the Cape Province. The Governor-General is to be enabled to appoint instead a medical officer of health for the Union, and so many assistant medical officers of health for the Union and additional medical officers of health as he may deem necessary. These officers have, of course, already been appointed. It lays down that the medical officer of health and assistant medical officers of health shall possess degrees, diplomas, or certificates in Public Health or State Medicine granted after special examination. Apparently any such qualification will suffice, whether registrable by a medical council in the Union or not. Apparently also it is not contemplated that the additional medical officers of health need possess any such qualification. The Bill leaves almost intact the existing public health laws in the provinces, and no attempt whatever appears to have been made to consolidate these laws except in regard to the ports, in connexion with which the Governor-General is to be enabled to make regulations for the granting or refusal of pratique, and the detention in quarantine of vessels having, or suspected of having, on board the infection of any formidable epidemic disease, and for providing for the disinfection of anything likely to convey such infection. The regulations apparently are intended to be of a most drastic nature, and provision is made for the recovery from masters or owners or agents of vessels of any expenses incurred by the Government in the carrying of them out. The shipping interests are up in arms against the latter proposals, which, it is alleged, are more arbitrary than in any other country in the world. They particularly take exception to a clause which provides that in respect of any delay or detention of any vessel, person, or thing, or in respect of injury to or destruction of any thing, the Government shall not be liable to pay compensation.

The Bill will concentrate in the person of the Minister of the Interior the powers, duties, and functions of the former medical officers of health of the old colonies, and in this respect when considered from a medical standpoint it is objectionable. It is true that the Minister is to be empowered to assign to any of the medical officers any of the powers, duties, and functions that he may deem fit, but the object of the Bill is clearly to subordinate the medical officers to the lay officials of the Department of the Interior. The duties of the medical officers and assistant and additional medical officers of health are merely to advise the Minister on questions of public health and to perform such functions and carry out such duties in relation to public health as the Minister may from time to time assign to them, and on the instructions of the Minister to advise the administrator and executive committee of any Province in respect of such public health matters as may arise in the exercise of the statutory powers which are vested in any such administrator and executive committee in relation to local authorities. They are to make inspections and inquiries and obtain reports only on the instructions of the Minister, and generally are evidently intended to be kept under lay control which might hamper them in the discharge of any duties assigned to them and prevent them from exercising efficiently the ordinary duties of health officers. In several respects the proposals are more open to criticism than those in last year's Bill, and if they

become law may seriously affect the public health, and will certainly lead to friction with local authorities.

A clause has been introduced enabling the Minister, in case of urgency or when a local body is not administering its affairs to his satisfaction, to substitute an officer for the local authority to carry out any work the Minister may consider necessary in the event of the local authority refusing to do his bidding. A provision of this sort from a purely professional standpoint could be regarded favourably if there were to be established a proper department of public health with a medical officer as its permanent head. Unfortunately this is not intended, and under the Bill as drafted the assistant and additional medical officers of health are to be all independent units, and the Minister is to be advised not necessarily by the medical officer of health for the Union but by any assistant or additional medical officer of health whose advice he may care to seek. Moreover, as was pointed out in the debate on the second reading, the clause encroaches upon the rights of the provincial councils which under the Act of Union have been appointed the local government boards for the control of local authorities in each province. The Minister of the Interior, in moving the second reading of the Bill, disregarded these issues, and pleaded that the measure should be passed into law with the least possible delay on the ground that the Public Health Act in Natal had expired by time in December last, and that the Government was faced with an outbreak of plague in Durban and had no adequate powers to deal with it. But the Natal Public Health Law could be renewed by the passage of a short Act of one section to which no exception could be taken. The Bill has been received with hostility by the medical profession, local authorities, provincial councils, and the general public.

Prevention of Tuberculosis.

The Minister of the Interior, in moving the second reading of the Public Health Bill in Parliament, foreshadowed the appointment of a committee of experts to inquire into the prevalence of certain diseases, amongst which he mentioned tuberculosis. Sir Frederic de Waal, the Administrator of the Cape Province, in presiding a few days later at the annual general meeting of the Association for the Prevention of Tuberculosis, announced the names of those whom the Government had appointed to the commission. They are as follows: Dr. A. J. Gregory (chairman), Dr. C. Porter, Dr. W. H. Te Water, Dr. G. A. Turner, and Mr. Jameson. Sir Frederic de Waal took the opportunity of paying a glowing tribute to the work Dr. Gregory had performed during 20 years of strenuous service as medical officer and assistant medical officer of health for the Cape Colony, and said that it would have been impossible for the Government to have found anyone more eminently qualified to act as chairman of the commission than Dr. Gregory, who was recognised by the profession and the general public as easily first among South African sanitarians. He praised generally the *personnel* of the commission, mentioning that Dr. Porter was the well-known medical officer of health of Johannesburg, with special and prolonged experience of disease and its prevention on the goldfields. Also that Dr. Te Water had been formerly in a large general practice, and then was for several years Colonial Secretary of Cape Colony, and as such had been the Minister in charge of public health; that Dr. Turner first had held a public health appointment under the Government of Cape Colony and for a number of years had been medical officer of the Witwatersrand Labour Association, and in that capacity has had special experience of, and had become recognised as an authority upon, diseases amongst natives; and that Mr. Jameson as a former Minister of Public Works in Natal would bring to the commission the ripe judgment of a man of affairs. In the course of a long and sympathetic speech the Administrator congratulated the association upon its efforts, and said that the appointment of the commission had been in no small measure due to the agitation that had been started and kept alive by the association. With Sir Frederic de Waal's remarks generally the profession agree, and the appointment of the commission has given universal satisfaction.

Non-publication of Vital Statistics.

No returns of births and deaths have been published since 1908, and consequently although the census figures are now available they are of very little use to health officers in South Africa, for there are no reliable data upon which to calculate the death-rates in the different urban areas of the Union. As far as the Cape Province is concerned, it is understood that before Dr. Gregory was retired on pension he had collated as usual the very full information in this respect that has always appeared in the report of the medical officer of health for the Cape Colony which has been annually presented to Parliament. It is understood that this report was actually printed, but was not presented to Parliament or distributed for general information because it was printed in the English language only. If this is the case it would seem to be absurd that the information should be withheld from the general public, as the statistics usually appearing therein are of the greatest possible value to health officers generally and to local authorities. It is expected that an effort will be made to induce the Government to permit distribution of the report.

Plague at Durban.

It is evident that plague has obtained a firm hold amongst rodents at Durban; the official bulletins that have been issued by the Government in regard thereto have been somewhat misleading as tending to minimise the gravity of the position. There is not likely to be any large outbreak amongst human beings, but there will be great difficulty all the same in eradicating the disease, and in preventing sporadic cases occurring in the town and infection being carried to other centres. A suspected case occurred at Maritzburg in the course of the month, but no official statement has as yet been issued in regard to it. In Durban itself two further cases have occurred in the course of the month, one of which proved fatal.

Weights and Measures Bill.

A Bill has been published which is intended to consolidate and amend the laws in force in the Union relating to weights and measures. This Bill is likely to give trouble if it becomes law as at present drafted. There have always been two systems at the Cape—namely, the Imperial and the Cape standards of weights and measures. The Bill re-enacts these standards, but legalises in addition the metric system for all commercial purposes. Oddly enough, however, from a date to be fixed by the Governor-General by proclamation in the *Gazette*, no person is to be permitted to sell drugs and medicines retail by weight or measure except in accordance with the metric system. This provision has caused a considerable outcry from pharmacists, who fail to see why differential treatment should be meted out to them, and urge that if it is desirable that the metric system should be made compulsory to those dealing with drugs, which they do not admit, it is equally desirable that it should be made compulsory in the case of all other commercial transactions. It is expected that the trade will show considerable opposition to the proposals.

Feb. 26th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Science in India.

A PROPOSAL has been put forward for the establishment in India of an association after the fashion of the British Association for the Advancement of Science, whereby workers throughout the country might be brought more closely into touch with one another. It is proposed to include every field of inquiry and every aspect of scientific activity, whether purely theoretical or applied to those numerous special problems offered by the Indian Empire and peculiar to its natural and economic conditions. Mr. MacMahon, professor of chemistry at Canning College, Lucknow, and Mr. Simonsen, professor of chemistry at the Presidency College, Madras, have undertaken to arrange an informal plebiscite as to whether it is possible to form such a society in India.

Proposed Medical Appointments and Legislation.

Sir Reginald Craddock, the Home Secretary, replying at a recent meeting of the Imperial Legislative Council to a question as to the appointment of men outside the ranks of the Indian Medical Service as senior clinical professors in the medical colleges, said that it was the intention of the Government shortly to appoint an officer outside the ranks of the Indian Medical Service to the newly-created chair of

anatomy in the Medical College, Calcutta. It was because the best qualified professors had hitherto been found amongst the members of the Indian Medical Service that these posts had hitherto been filled from that service. As to the acceptance of private service by professors of medical colleges, it was pointed out that professors in medical colleges and hospital physicians might be either whole-time or part-time officers. Instruction in chemistry, for example, was normally given by the chemical examiner and in medical jurisprudence by a civil surgeon or police surgeon. In some of the colleges a professor may combine the duties of more than one chair with those of civil or presidency surgeon. A consulting practice was permitted in certain appointments. In the so-called non-practising professorships it was not. With regard to the formation of a civil medical department, the Home Secretary said that the Government of India was still awaiting the orders of the Secretary of State in the matter, and that in these circumstances no further information could at present be given. The motion to commit the Special Marriage Bill to a select committee was defeated by 42 votes to 11.

The People and the Land.

It is often said that the growth of industrialism in India must draw people from the villages to the overcrowded towns, but the newly issued Census report of Baroda State indicates a movement in the opposite direction. While the changes of the times have led to the disappearance of some old town industries, trade which was formerly confined to the towns now flourishes to a large extent in the villages also. The Census reporter ascribes the change to the extension of railway communication.

The Durbar Dairy.

The Government dairy was one of the features of the recent Durbar. To meet the demands for dairy produce for the entire community, both Europeans and Indians, encamped within the Durbar area, brick and galvanised iron buildings, which included separating and pasteurising rooms, a butter-making department, and a large cold-storage plant, besides the necessary offices and cattle-sheds, were erected. There were elaborate washing and sterilising arrangements, and a complete tramway system was installed between the stock and fodder yards, the dairy, and the store-rooms. There were over 2000 milch animals on the premises.

The Women of India.

In the course of a lecture to the ladies' club at Bhopal, Her Highness the Begum of Bhopal said that the great qualities of the Western nations were due to the women of those countries being educated and to the training they imparted to their children. She urged the members of the club to make the education of their sex the chief object of their lives, to help the poor, and instead of wasting money on absurd ceremonies to give their assistance to girls' schools, to women's clubs, and to the newspapers and magazines that served the interests of the Indian women.

An Unrecognised Indian Debt to Europe.

It is seldom realised how deeply India is indebted to Europe for what knowledge it has of ancient India. Dr. Vogel, in a note published in the report on the Archæological Conference held last year at Simla, pointed out that Indian archæology is a European science, started and carried on almost entirely by European scholars. One looks in vain for any Indian name, with the notable exception of Sir R. G. Bhandarkar. It is the same with Indian art. Dr. Vogel attributes this apathy largely to the absence of historical sense from the Indian mind.

The Indian Lunacy Bill.

The report, which is unanimous, of the select committee for the Bill to consolidate and amend the law relating to lunacy in India has been presented to the Imperial Legislative Council. The general direction of the modifications recommended in the Bill is the removal of mere vague expressions from the old laws, which are now consolidated, without making any specific alteration in their spirit, and the adaptation of the principles of the later English statutes on the subject to the circumstances prevalent in India. The only real new matter in the Bill is a provision which enables the retention in a lunatic asylum of a voluntary boarder. This has been based on a similar provision in the English and Scotch law.

A Unique Memorial of the Durbar.

Dr. J. A. Turner, executive health officer, Bombay, sends to the *Times of India* a letter received by him from Mr. Ratan Tata, in which the latter offers a sum of Rs.15,000 a year for ten years towards the cost of instituting measures for the eradication of tuberculosis from amongst King George's Indian subjects, as a form of commemorating the King's visit and as testifying to his sense of the urgency of an organised campaign against phthisis. Dr. Turner records the Governor's willingness to preside at a public meeting to further the campaign.

The Government College, Lahore.

Major J. Stephenson, I.M.S., who has been professor of biology at the Government College, Lahore, since 1906, has been appointed its principal, and will take charge in September after taking a short leave. Major Stephenson has edited and translated Sanai's "Hadiqa-ul-Haqiqat," a difficult Persian work.

Kala-azar in Madras.

At the last meeting of the Madras Legislative Council the question of "Black Town Fever" was discussed. The disease does not seem to be on the increase in Madras, but keeps up the same yearly average of cases, and several fatal cases have lately occurred.

Mandalay Maternity Hospital.

Work has been started in connexion with the King Edward Memorial Maternity Hospital at Mandalay, which is estimated to cost Rs. 18,000. It is expected to complete the work in six months.

March 23rd.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Case of Dr. Peacock.

THE case of Dr. S. Peacock, who was found guilty of the murder of a young woman, is still before the law courts. The circumstances have been set forth,[1] and are concerned with the disappearance of the victim, who was admitted to have been an inmate of a private hospital managed by the accused. After the trial an appeal was made to the State Full Court, and subsequently to the Federal High Court, which granted a new trial on the ground of misdirection to the jury. The new trial has just been concluded before Mr. Justice Hodges and a second jury, who disagreed and were discharged. The third trial was begun two days later and has not concluded. The evidence for the Crown is almost entirely circumstantial, and at the second trial no witnesses for the defence were called.

Government Purchase of Radium.

The Victorian Government some time ago was furnished, at its own request, with a report on the advisability of purchasing a large amount of radium by representatives of various hospitals. The report was against the purchase of lots costing more than £1500, which could be used at one or more hospitals. The Government now expresses surprise that no hospital has made application for such assistance, but it is most probably due to the fact that they were not invited to do so, and did not understand that they were expected to apply.

Federal Quarantine.

The Director of Federal Quarantine (Dr. Norris) has returned to Australia after a six months' tour of the world, in the course of which the various quarantine systems in vogue were examined. Dr. Norris has expressed the opinion that as the result of his inquiries a system of quarantine can be adopted by the Commonwealth which will be much less costly than has been predicted hitherto. At present, though the department is Federal in name, it practically consists in a continuation of the old State quarantine arrangements under the same officials, who are in the unsatisfactory position in many instances of being responsible to two Governments.

Weather Vagaries.

The summer just coming to an end in Melbourne has been remarkable for vagaries of temperature even in a notoriously

[1] THE LANCET, Dec. 9th, 1911, p. 1667.

erratic climate. Throughout December and January the temperatures were remarkably low, and early in February came one week of heat during four days of which the temperature was over 100° and in two over 107°. Since then the weather has again been cool. As a result of the cool season typhoid fever returns show a falling off, and epidemic diarrhœa has not been very rife. Diphtheria, on the other hand, has been widespread for the spring and summer months.

A Federal Appointment.

Much interest has been aroused by the announcement that the Federal Government had appointed Professor Gilruth, of the Veterinary School, Melbourne University, as administrator of the Northern Territory of Australia. The powers will be those of Governor of a Crown Colony, and the salary £2250 per annum, with travelling allowances. Professor Gilruth came to Victoria from New Zealand to organise the Veterinary School, and has been very successful in making it a vigorous centre of activity. Professor Gilruth is a competent bacteriologist, and some months ago made a tour through the Territory. No successor in his present position has yet been nominated.

Queensland Medical Bill.

The Medical Bill, under which it was proposed to register herbalists and opticians, has been shelved. The Bill was vigorously opposed by the medical profession in Brisbane, and considerable modification of its original provisions had been attained. Notwithstanding this, the proposed Act was still unacceptable to the medical profession, and further interviews with the Premier have been sought. For the present the matter remains in abeyance.

Personal.

Professor H. B. Allen, who has occupied the chair of pathology in the Melbourne University for a quarter of a century, was entertained at dinner by the medical profession of Melbourne on Feb. 22nd, on the eve of his departure for London on a holiday. Professor Allen has had the largest share in the organisation of the medical school of the Melbourne University, and has been Dean of the Faculty of Medicine for many years.

March 6th.

Obituary.

JOHN DIXON MANN, M.D. ST. AND., F.R.C.P. LOND., &C.,

PROFESSOR OF FORENSIC MEDICINE AND TOXICOLOGY IN THE VICTORIA UNIVERSITY; MEMBER OF THE GENERAL MEDICAL COUNCIL.

WE regret to announce the death of Dr. John Dixon Mann, professor of forensic medicine and toxicology in the University of Manchester, which occurred early on Saturday morning last, April 6th, from acute pneumonia after a few days' illness.

John Dixon Mann was born at Kendal in 1841, so that he was about 70 years of age at his death. He started his professional career in the old-time manner by being apprenticed to a practitioner in his native town, and obtained his first qualifications as M.R.C.S. Eng., L.S.A. Lond., in 1862 after working at the Manchester School of Medicine. He was then for many years engaged in general practice in Manchester, but in 1880 he took the Membership of the Royal College of Physicians of London and the M.D. degree in the University of St. Andrews, and decided to confine himself to consulting practice. He had won the confidence of his brother practitioners in his ability and therapeutic knowledge, and although he started thus late he was accepted from the first by his own profession as a leader. In 1882 he was elected to the position of honorary physician to the Salford Royal Hospital, that being his first institutional appointment, and three years later he became lecturer on forensic medicine and toxicology in the Owens College, Manchester. Here it at once became apparent that he had found his *métier*, for the value of his practical instruction and the clearness of his systematic lectures revealed him as a thorough master of his subjects. His lectureship was shortly afterwards erected into a professorship, and in 1893 he published his important work on "Forensic Medicine and Toxicology." The fourth edition of this book appeared in 1907, and the success which it achieved from the first has been steadily maintained. It is a sound, scholarly, and practical work, reinforced especially in the posological sections by original experience; and many students and practitioners have had cause to thank the writer for the lucid and sensible nature of his teachings.

In 1890 Professor Dixon Mann was elected a Fellow of the Royal College of Physicians of London, and he also acted as examiner in forensic medicine in the Universities of London, Oxford, and Sheffield. The great amount of practical work which he had done, both in the University laboratory and in his private laboratory, made him a particularly valuable examiner, for he was quickly able to detect real knowledge of principles and to appraise the value of answers given to him. But it must not be assumed that Professor Dixon Mann ever became merely a toxicologist; he was a sound and learned physician, as those who followed his practice at the Salford Royal Hospital knew, and many of his papers on medicine in its various branches bear testimony to his wide range and power of making good use of his experience. He contributed articles to Quain's "Dictionary of Medicine" and to Bain's "Text-book of Practical Medicine"; he made interesting communications on cerebral and spinal pathology to *Brain* and the *British Medical Journal*, and published papers in THE LANCET on Addison's Disease and Scarlatinal Nephritis.

Although Professor Dixon Mann was late in attaining the prominence to which his learning and industry entitled him, during the last 20 years of his life he was accepted by all as an authority on his special subjects, while he exercised a great public influence in Manchester. At the University he was for a long time one of the most useful and business-like workers, and at the time of his death was representative of that University upon the General Medical Council. He was prominent at the Manchester Medical Society and the Manchester Pathological Society, in the presidential chair of both of which he sat, while he was also chairman of the Manchester and Salford Sanitary Association, whose good work has often been recorded in these columns.

Professor Dixon Mann was a widower and leaves no children.

ANGUS FRASER, M.A., M.D., C.M., LL.D. ABERD.,

CONSULTING PHYSICIAN TO THE ABERDEEN ROYAL INFIRMARY.

Dr. Angus Fraser died at his residence in Aberdeen on April 2nd in his seventy-fifth year, after a period of protracted ill-health. He was born in 1838, the son of Mr. Angus Fraser, a highly respected Aberdeen merchant, and received his education in his native city. He took his M.A. degree at the University in 1858, and in 1862 proceeded to the degree of M.D., C.M., with honours. After leaving college he spent some time abroad and continued his studies in the Paris hospitals. On settling in Aberdeen he quickly acquired an extensive practice. For two years he was assistant in chemistry to the late Professor Brazier, who occupied the chair of chemistry at Aberdeen University. He was elected a Fellow of the Chemical Society, became medical officer to the Aberdeen Dispensary, and in 1871 was appointed physician to the Aberdeen Royal Infirmary, rising ultimately to the position of senior physician. As a lecturer in clinical medicine he achieved a high reputation. To his energy was due in great measure the reconstruction and reorganisation of that institution, and, in conjunction with Dr. Garden, he was largely instrumental in effecting considerable reform in the administration and nursing. About three years ago he retired, and was placed on the consulting staff, when the board took the opportunity to put on record its high appreciation of his invaluable services.

For many years Dr. Fraser acted as a medical officer of the Aberdeen Post Office staff. His connexion with the University, also, was of long duration. From 1869 to 1872 he was an examiner therein, and he was also for some years inspector of examinations in the Universities of London and Durham. In 1889 he was appointed by the general council of the University of Aberdeen one of the assessors of the University Court, which office he held until 1911, and he was elected by the committee as the representative of the University on the General Medical Council. The University conferred upon him the LL.D. degree in

1901. For 28 years Dr. Fraser served in the Volunteer Forces as surgeon, surgeon-major, and surgeon-lieutenant-colonel of the 1st V.B. Gordon Highlanders, retiring in 1896 with the rank of brigade surgeon-lieutenant-colonel. He received the Volunteer Decoration. Among his other activities he was a Fellow of the Obstetrical Society of London, chairman of the District Nursing Association, and physician to the Aberdeen Deaf and Dumb Institute. In politics he was a Liberal, and was one of the founders, and for many years president, of the Aberdeen Liberal Association. Dr. Fraser was unmarried. His funeral took place at Allenvale Cemetery on April 4th.

WILLIAM HENRY FOLKER, F.R.C.S. ENG.,

CONSULTING SURGEON, NORTH STAFFORDSHIRE INFIRMARY.

THE death has occurred at Hanley of Mr. William Folker, for many years a prominent North Staffordshire practitioner. He was born in 1826 and educated at New College School, Oxford. Before entering Charing Cross Hospital he was apprenticed, in accordance with the custom of the time, to James Fernandez Clarke, for many years a member of the editorial staff of THE LANCET. Mr. Folker also studied at the University of Paris, and qualified M.R.C.S. in 1851 and L.S.A. in 1852. Twelve years later he became F.R.C.S. by examination. In 1853 he began his long connexion with the North Staffordshire Infirmary as house surgeon. Subsequently he became surgeon and ophthalmic surgeon, and joined the consulting staff in 1892, while he was elected vice-president of the infirmary in 1904 and president in 1906. For 27 years he was attached to the Staffordshire Volunteer Rifles and received a long service medal. In the "sixties" he contributed three short surgical papers to THE LANCET, two of these being accounts of successful ligature of large arteries. Mr. Folker married in 1857, and has four surviving children, one of whom holds his father's former post of ophthalmic surgeon to the North Staffordshire Infirmary.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. John Goodman, formerly professor of midwifery and gynæcology in the Kentucky School of Medicine, Louisville.—Dr. Chotin, honorary physician to the Lille hospitals.—Dr. P. Brousse, formerly member for the Department of the Seine in the French House of Deputies.—Dr. Imbert Goubéyre, formerly professor of hygiene in the Clermont School of Medicine.

TROPICAL MEDICINE IN BELGIUM.—A Belgian Academy of Tropical Medicine is to be established by means of an estate presented to the country by M. W. Duden, of Dortmund. The principal will be Dr. Broden, formerly director of the Academy in Leopoldville in the Congo.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. E. Wieland has been promoted to the chair of Pædiatry in succession to Dr. Hagenbach-Burckhardt, who is retiring; Dr. L. Courvoisier is retiring from the chair of Surgery.—*Berlin:* The Lazarus Hospital has hitherto been under the charge of a single director, but it has now been decided to appoint two—Dr. G. Seefisch, of the Victoria Augusta Hospital in Weissensee taking the surgical side and Dr. H. Weber the medical side.—*Breslau:* Dr. Franz Roehmann has been promoted to be Honorary Professor of Physiological Chemistry.—*Copenhagen:* Dr. Johanne Christiansen has been recognised as *privat-docent* of Medicine.—*Genoa:* Dr. Vittorio Porcile has been recognised as *privat-docent* of Surgery.—*Halle:* Dr. Pfeifer, Oberarzt in Psychiatric Clinic, has been promoted to be Director of the Provincial Asylum, Nietleben, in succession to Dr. S. Fries, who is retiring.—*Heidelberg:* Dr. Hermann Braus, Prosector to the Anatomical Institute, has been appointed to the chair of Anatomy in succession to Dr. M. Fürbringer, who is retiring.—*Königsberg:* Dr. Ellinger, who was for many years assistant to Dr. Jaffe, professor of pharmacology, lately deceased, has been appointed to succeed him in the chair; Dr. O. L. Klienberger has been recognised as *privat-docent* of Psychiatry; Dr. H. Bott as *privat-docent* of Surgery.—*Prague (German University):* Dr. Ferdinand Hueppe is retiring from the chair of Hygiene.—*Zürich:* Dr. O. Roth has been recognised as *privat-docent* of Medicine.

THE NATIONAL INSURANCE ACT.

MEDICAL REPRESENTATION ON THE ADVISORY COMMITTEE.

AMONG the 159 members of the Advisory Committee appointed, under Section 58 of the National Insurance Act, by the Joint Committee of the Commissioners, for the purpose of giving advice and assistance in connexion with the making and altering of regulations under Part I. of the Act, are 34 members of the medical profession. The first group consists of 16 "qualified medical practitioners with personal experience of general practice," of whom Dr. John Adams, Dr. R. M. Beaton, Dr. T. M. Carter, Dr. J. S. Darling, Dr. S. Hodgson, Dr. J. A. Macdonald, Dr. J. Munro Moir, Mr. J. Neal, Dr. E. O. Price, Mr. D. F. Todd, Mr. E. B. Turner, Mr. T. Jenner Verrall, and Dr. A. H. Williams are nominated by the British Medical Association; and Miss M. H. F. Ivens, Dr. Constance Long, and Miss A. M. Watson are nominated by the Association of Registered Medical Women.

The second group consists of 17 medical men selected by the Commissioners. These are Dr. Christopher Addison, M.P., Secretary of the Board of Intermediate Medical Studies, London University; Professor Sir T. Clifford Allbutt, K.C.B., Cambridge University; Mr. C. J. Bond, senior surgeon to the Leicester Infirmary; Sir R. J. Collie, medical examiner for the London County Council; Sir Frederick Eve, surgeon to the London Hospital; Dr. Adam Fulton, Nottingham; Dr. R. McKenzie Johnston, consulting aural surgeon, Royal Infirmary, Edinburgh; Mr. Herbert Jones, medical officer of health, Herefordshire Sanitary Districts; Dr. E. J. Maclean, senior gynæcologist, Cardiff Infirmary; Dr. H. H. Mills, Kensington; Dr. G. Reid, medical officer of health, Staffordshire; Dr. J. Robertson, medical officer of health, Birmingham; Dr. Lauriston E. Shaw, physician to Guy's Hospital; Professor R. Stockman, Glasgow University; Dr. W. E. Thomas, Ystrad Rhondda; Dr. Norman Walker, physician to the Royal Infirmary, Edinburgh; and Professor G. Sims Woodhead, Cambridge University.

Among the other persons selected by the Commissioners are two pharmacists, Mr. J. P. Gilmour and Mr. W. J. U. Woolcock; two midwives, Mrs. Bedingfield and Miss Alice Gregory; two nurses, Miss M. Hardman and Miss A. Michie; and two hospital authorities, Dr. D. J. Mackintosh, M.V.O., Glasgow Western Infirmary, and Mr. A. William West, St. George's Hospital, London.

THE SHOREDITCH MEDICO-ETHICAL SOCIETY.

The inaugural meeting of this society took place at 26, Queen's-road, Dalston, on March 26th, by kind permission of Mr. J. H. Porter. Dr. Major Greenwood was in the chair, and there were present Dr. A. G. Southcombe, Mr. A. H. Sandiland, Dr. T. Chetwood, Dr. J. Fettes, Mr. H. Bird, Dr. H. E. Garrett, Mr. H. A. Speed, Mr. H. G. Dixon, Mr. M. P. Ladell, Mr. T. Hobbs Crampton, Dr. L. Unwin Young, Mr. W. F. Roe, Mr. A. Ambrose, Dr. B. G. Morison, Mr. J. O'Dwyer, Mr. A. B. Hammond, and Mr. J. H. Porter.

In opening the proceedings, the CHAIRMAN said that he should like to point out that although the present meeting was being held under the auspices of the British Medical Association, it was in no sense a meeting of that body, and members and non-members of that Association were precisely on the same terms. He would ask Mr. Porter, who had done most of the work in calling this meeting and had allowed them to make use of his house, to inform those present what had led up to the present action.

Mr. PORTER said that the most urgent matter in the immediate future was to improve the local organisation of the profession. With that object it had been decided to canvass all members of the medical profession residing in certain districts, and, where possible, to form local associations. He had communicated either personally or by letter with every practitioner in Shoreditch, and he was glad to say that he had had only two refusals to attend this meeting, and in each case the writer was thoroughly in sympathy with the course that had been taken.

The CHAIRMAN then briefly pointed out the present position of the profession in reference to the National Insurance Act. He enumerated the terms of the ultimatum that had been recently sent to the Insurance Commissioners by the State

Sickness Insurance Committee on behalf of the British Medical Association, and said that in his opinion it was unlikely that they would be accepted. Failing that, suspension of medical benefits to insured persons was most likely to follow. Then the profession would be face to face with the friendly societies largely augmented in numbers, and victory in the contest that was bound to come could only be secured by good local organisation. He read Minute 62 of the Representative Meeting of the British Medical Association held in February last:—

That in event of the suspension clause coming into effect no new members be accepted by club doctors below a rate to be fixed by the State Insurance Committee.

As most of the practitioners in Shoreditch were club doctors' this resolution largely affected them, and would require the most careful consideration. It would be impossible to take any steps in this direction unless men knew what their professional neighbours were prepared to do, and only by meeting together and discussing the matter could this be known. Organisation of this kind, in which everyone could and must help, was their only hope. Resolutions passed at Representative meetings were not enough and would be practically valueless unless seconded by local efforts. It was for this reason that it was proposed to inaugurate that evening an association of all medical men practising in Shoreditch, and the first motion he should put to the meeting was:—

That an association of all practitioners in the area of the borough of Shoreditch be immediately organised.

This was seconded and carried unanimously.

The CHAIRMAN said it would be necessary to name this association. In the borough of Islington adjoining two local associations had been organised under the name of Medico-Ethical Societies. As he thought there was some value in uniformity, he would move that the name be the "Shoreditch Medico-Ethical Society." This was seconded and carried with some dissent. It was stated that the term "ethical" had been objected to in Finsbury, but Mr. ROE explained that the objection had proceeded from only one person.

The meeting then proceeded to appoint officers. Dr. Greenwood was elected President and Mr. Bird Vice-President. Mr. Porter was elected honorary secretary. It was decided that there should be an executive committee, consisting of the President, Vice-President, treasurer, and secretary, and four elected members—Dr. Garrett, Mr. Ambrose, Dr. Chetwood, and Mr. Dixon. It was decided that the office of treasurer should be held provisionally by the honorary secretary. The subscription of members was to be 5*s.* annually, and Dr. Fettes and Mr. O'Dwyer were appointed auditors. The executive committee was instructed to meet as soon as possible and formulate a set of rules to be submitted to another general meeting.

Mr. ROE gave an interesting account of the origin and progress of the Finsbury Medical Society, and Dr. MORISON described what had been done in Islington.

The meeting separated with a vote of thanks to Mr. Porter and the chairman.

A PROVISIONAL MEDICAL COMMITTEE AT WANDSWORTH.

A meeting of medical men to consider the formation of a provisional medical committee was held at Battersea Town-hall on March 28th. Dr. M. G. Biggs was elected chairman, and Mr. J. Kennish honorary secretary. The following were the principal resolutions carried:—

That this meeting approves of the formation of a Provisional Medical Committee for the purpose of organisation and defence.

That the committee consist of 35 members.

That each member of the local profession be asked to subscribe 5*s.* towards the expenses of the Provisional Committee.

That the duties of the Provisional Committee be:—

1. If the profession decide to undertake work under the National Insurance Act, to define the terms and conditions required by the local profession.

2. If the profession decide not to work under the Act, to organise the profession so that no insured person shall obtain medical attendance except on the terms and conditions agreed upon by the local profession.

3. To organise the profession so that no uninsured person shall be able to obtain medical attendance under a contract at a less rate than agreed upon by the local profession.

4. That the committee shall keep the State Sickness Insurance Committee of the British Medical Association fully informed as to its course of action and the results obtained.

5. That the coördinating body for this Provisional Committee and the other Provisional Committees in the London area shall consist of two members elected by each Provisional Local Committee which shall be formed in that area.

Four members of the committee are to be elected from each of the seven districts, and seven members to be elected from the division generally. Each medical man has 35 votes, but cannot give more than one vote to any one candidate. Each candidate must be nominated by at least four medical men resident in the division.

Nominations may be sent to Mr. Kennish, at 73, Clapham-Park-road, S.W., up to April 15th.

A PROVISIONAL MEDICAL COMMITTEE AT LEWISHAM.

A meeting was held at Lewisham on April 4th to draw up the rules and regulations under which this committee should work, when it was decided that the committee should have power to deal only with matters pertaining to the Act in the area for which it is appointed; that it should serve under the coördinating power of the council of the Metropolitan Counties Branch of the British Medical Association; and that it should call a meeting of all the medical practitioners of the borough, 20 local medical practitioners giving satisfactory security for the expenses. Subcommittees of this provisional committee were formed, and a meeting of the subcommittee for Catford and Lewisham was held on April 10th, when a form of local guarantee was drawn up and signed by 20 medical practitioners, by which it was agreed not to accept any work under the National Insurance Act, or any medical contract work, at lower terms than those sanctioned by the British Medical Association. The following resolution was also carried:—

That this meeting of Lewisham medical practitioners views with grave apprehension the names of those members of the profession selected by the Insurance Commissioners to act on the Advisory Committee; considering that it was understood that the Act was to be worked solely by general practitioners, and that as a consequence there was an implied condition that the majority of the appointments on the Advisory Committee should be given to members of the profession in general practice; that of the numbers appointed not more than three can be even supposed to have knowledge of general practice, and that as a consequence any advice from such source will be received by the profession with grave apprehension; that consequently we protest emphatically against the names announced in the morning papers.

THE SCOTTISH MEDICAL INSURANCE COUNCIL.

Inquiries are being made by the Scottish Insurance Commissioners from individual medical men to supply a number of particulars about their private and club practice, including details of gratuitous work done, bad debts, &c. It is earnestly hoped that such information be not supplied, and that the Commissioners be referred to the Scottish Medical Insurance Council.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the First Professional Examination, held on March 26th, 27th, 28th, 29th, and 30th, the following candidates were approved in the subjects specified:—

Chemistry and Physics.—Percy Banbury, St. Thomas's Hospital; Cyril Montague Bullpitt, Guy's Hospital; Arthur Alfred Fitch, Liverpool University; Arthur Noel Haworth, Charing Cross Hospital and King's College; Charles Gordon Hooper, King's College; William Kenneth Talbot Hope, Royal Dental Hospital; Charles Hanmer Jenkins, London Hospital; Florence Kerruish, London School of Medicine for Women; John William Welsh Newsome, Middlesex Hospital; Reuben Woodland Payne, Charing Cross and Royal Dental Hospitals; Basil Campbell Ward Simpson, Guy's Hospital; and Eric Lionel Stephenson, London Hospital.

Chemistry.—Arthur James Bado, St. Thomas's Hospital; Basil Edward Barnes, Birmingham University; David MacMurray Dickson, St. Thomas's Hospital; Alfred Beresford Dummere, London Hospital; George Rubert Howe, Guy's Hospital; John Morrice Maitland Marshall, St. Bartholomew's Hospital; Lionel Watson Moore, Guy's Hospital; Denys Revell Reynolds, St. Bartholomew's Hospital; Ronald James Scarr, Manchester University; Charles Montague Slaughter, St. Thomas's Hospital; Henry George Watters, London Hospital; and James Wiseman, Sheffield University.

Physics.—Gideon Albertyn Beyers, St. Bartholomew's Hospital; Henry John Ewart, University College; William Vincent Gabe, Middlesex Hospital; Percy Ward, Sheffield University; George William Wheldon, Guy's Hospital; Thomas Wilson, Manchester University; and Leonard Heatley Woods, St. Lawrence College, Ramsgate.

Biology.—Adolfo Arias, St. Bartholomew's Hospital; Philip Ardern Ashcroft, Manchester University; Arthur James Bado, St. Thomas's Hospital; Thomas Burton Bailey, Cambridge and Municipal College, Portsmouth; Gideon Albertyn Beyers, St. Bartholomew's Hospital; John Ryther Steer Bowker, Middlesex Hospital; Arthur Bulleid, Guy's Hospital; Geoffrey Francis Cobb, St. Bartholomew's

Hospital; Arthur Alleyne Kingsley Conan Doyle, St. Mary's Hospital; Albert Victor Spurgeon Davies, St. Mary's Hospital; Charles Joseph Christopher de Silva, Liverpool University; William Robinson Dickinson, St. Bartholomew's Hospital; Abdel Aziz Hassan El-Zeneiny, Cairo and London Hospital; Henry John Ewart, University College; William Farquharson, St. Mary's Hospital; Frederick Oloff Fehrsen, London Hospital; Arthur Alfred Fitch, Liverpool University; Maurice Rolfe Vickers Ford, Sheffield University; Oliver Halstead, Guy's Hospital; James Maurice Harrison, St. Thomas's Hospital; Arthur Noel Haworth, Charing Cross Hospital and King's College; Sydney Nuttall Hayes, Manchester University; Cyril Bowdler Henry, Sheffield University; Charles Guy Hitchcock, London Hospital; Herbert Meade Hobson, London Hospital; George Hoffmeister, Middlesex Hospital; Charles Ewart Hopwood, Manchester University; Percy Gilbert Horsburgh, St. Bartholomew's Hospital; George Hubert Howe, Guy's Hospital; John Morgan Hughes, M.P.S., Middlesex Hospital; Mabel Marian Ingram, London School of Medicine for Women; William George Johnston, St. Mary's Hospital; Claude Stewart James Kearney, St. Bartholomew's Hospital; Florence Kerruish, London School of Medicine for Women; Charles Hardiman Laver and Eustace Fernando Llarena, Guy's Hospital; John Morrice Maitland Marshall and Richard Moser, St. Bartholomew's Hospital; Hubert Llewellyn Pridham, St. Paul's School; Cecil Nuttall Ratcliffe, Liverpool University; Owen Alfred Llewellyn Roberts, St. Mary's Hospital; Ahmad Hussein Samy, St. Bartholomew's Hospital; Ronald James Scarr and David Stewart, Manchester University; Mohammed Tewfik Talaat, King's College; Percy Ward, Sheffield University; Clement John Lethbridge Wells, Middlesex Hospital; Harry Mortimer Wharry, St. Bartholomew's Hospital; William Harold White, St. Thomas's Hospital; Thomas Wilson, Manchester University; and William Edwin Wilson and Thomas Fernando Zerolo, St. Bartholomew's Hospital.

At the Second Professional Examination in Anatomy and Physiology held on March 28th and 29th, and April 1st and 2nd, 99 candidates presented themselves, of whom 53 passed and 46 were referred. The following are the names of the successful candidates:—

Charles Harry Powell Allen, Madras University and University College; Errington Atkinson, London Hospital; Fritz Ernest Bendix, Middlesex Hospital; Christian Frederick Beyers, St. Bartholomew's Hospital; Sadashiv Vaman Bhat, Bombay University and Middlesex Hospital; Johannes Willem Bouwer, London Hospital; Isabel Florence Buckle, London School of Medicine for Women; Eric Catford, St. Bartholomew's Hospital; Ernest James Cooke, New Zealand University and Guy's Hospital; Edmund Rupert Dermer, Middlesex Hospital; Mostafa Dia, Cairo Medical School; Mohammed Kamil El Kholy, Cairo and University College; Ahmed Zaki Elsayed, Cairo and London Hospital; David Trevor Evans, University College, Cardiff; Richard Feltrim Fagan, University College; Huxley Fernando, Ceylon Medical College and Middlesex Hospital; Valentine Fox, London Hospital; Gerald Francis Petvin Gibbons, St. Bartholomew's Hospital; George Leonard Grant, Cambridge University; William Henry Harris, St. Bartholomew's Hospital; Samuel Hutchinson, London Hospital; Eric Llewelyn Ivens, London Hospital; Ifan Septimus James, University College; Tom Ramsden Kenworthy, Leeds University; Neville Hood Linzee, London Hospital; William Douglas McDonald, Middlesex Hospital; Francis Oreti MacGibbon, New Zealand University and London Hospital; Labib Abdul Malik, St. Mary's Hospital; Henry Wingate Maltby, St. Bartholomew's Hospital; Gerald Woffindin Maw, University College; Benjamin Robert Mayman, King's College; Herbert Guy Moser, St. Bartholomew's Hospital; Sachchidananda Hosen Paul, Calcutta University and Middlesex Hospital; John Ernest Pearse, St. Bartholomew's Hospital; *Alan Cecil Perry, London Hospital; David John Platts, King's College; Lao Htin Pob, L.M. & S. Calcutta, Calcutta University and Middlesex Hospital; Garnet Wolseley Pool, St. Thomas's Hospital; Hoel Parry Price, Guy's Hospital; Arthur Lowry Robinson, University College; George Francis Rowcroft, St. Bartholomew's Hospital; Tribhovandas Ozhad Shah, L.M. & S. Bombay, Bombay University and Middlesex Hospital; Simon Simons, University College, Cardiff, and St. Mary's Hospital; Bawa Harkishan Singh, Lahore Medical College; Peter de Safforie Smith, Birmingham University; John Walter Graham Steell, B.A. Oxon, Oxford and Manchester Universities; Walter Bernard Rick Stower, St. Bartholomew's Hospital; Percival Washington Symons, Middlesex Hospital; Harold Bourne Taylor, St. Mary's Hospital; Oscar Ramsay Unger, University College; William Ernest Wade, University College, Cardiff. Geoffrey Legh Wilkinson, Birmingham University; and Maurice Ulick Wilson, Westminster Hospital.

* Candidates entering for this examination were eligible to compete for the Begley Studentship of £20 per annum, tenable for three years. This studentship is awarded by the Royal College of Surgeons to the candidate who obtains the highest number of marks in the anatomical portion of the examination. Mr. Alan Cecil Perry, London Hospital, succeeded in obtaining the highest aggregate in this part of the examination and has therefore been recommended by the Board of Examiners for the studentship.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—

At the Preliminary Science Examination for the Licence in Dental Surgery, held on March 26th, 28th, and 29th, the following candidates were approved in the subjects specified:—

Chemistry and Physics.—Douglas Albert Raoul Aufranc, Middlesex Hospital; Arthur Bramston Austin, Royal Dental Hospital; Albert Edward Barnett, Birmingham Technical School; Henry Walter Breese, Royal Dental Hospital; Arthur John Cairns, Wandsworth Technical Institute; Samuel Hyman Coplans, Simon Langton School, Canterbury; Edmund Percy Deverall, University College, Cardiff; Arthur Duffy, Municipal Technical School, Manchester; Frank Bowler Goodison, Birmingham University Edward Cecil Gray and William Sadler Hartley, Manchester University; Robert John Hodgkinson, Uppingham School; Clifford Andrew Loveluck, University College, Cardiff; James Henry Martin and Harold Frederick Metcalf, Birkbeck College; Hugh Morgan, Holt School of Science, Birkenhead; John Lisle Mugford, Epsom College and Stafford Technical School; Clarence Longton Normandale, Polytechnic Institute; Robert Orton, Technical College, Bradford; Eric Vincent Pollitt, Manchester University; Harold Stanyer Powell, Birmingham University; Earl Leslie Robert and Simeon Cyril Shaw, Royal Dental Hospital; Leonard Smith, Birmingham University; Stanley Gordon Smith, Guy's Hospital; Cyril Wells Spendelow, Grimsby Technical Institute; John Molley Stebbings, Guy's Hospital; Joseph Gilbert Wade Sutcliffe, Bradford Technical College; Harry Laurence Thorn, Southend Technical School; Herbert Vernon, Royal Technical Institute, Salford; Arthur Stuart Whitworth, Royal Dental Hospital; Leslie Williams, Technical School, Birmingham; Gerald Coutts Williamson, Technical Institute, Wandsworth; Edgar Joseph Winstanley, Royal Dental Hospital; Samuel Anthony Withers and James Alfred Snarey Wright, Polytechnic Institute; and John Edward Wright, Guy's Hospital.

Chemistry.—Reginald James Robinson Baker, Holt School of Science, Birkenhead; Charles Alfred Ernest Cook, Technical Institute, Norwich; Sidney Francis Greenfield, Northern Polytechnic Institute; Maurice George Henry, Guy's Hospital; John Roland Humphreys, Liverpool Technical School; Alfred Kenneth Ince Jones, Middlesex Hospital; Edgar Clarence Lewis, Guy's Hospital; Harold Pembroke Mabe, Sheffield University; Arnold Clough Sutcliffe, Bradford Technical College; Willem Jacobus Rousseau Viljoen, Guy's Hospital; and Ronald Harold Vyvyan Whybro, Royal Dental Hospital.

Physics.—Ellis Gardner Browne, Royal Albert Memorial College, Exeter; Walter Lawton Cocker, Halifax Municipal Technical College; Howard Curtis, Hartley College, Southampton; Selim Hart, Birkbeck College; Wilfrid George Hollands, Polytechnic Institute; George Douglas Moore, Middlesex Hospital; William John Ross, Liverpool University; Frank Edward Welton, Hull Technical College; and Cecil Alexander Wilson, Technical School, Southend.

LONDON SCHOOL OF TROPICAL MEDICINE.—

The following is the list of successful candidates at the examination held at the close of the thirty-eighth session of the school:—

*S. N. Roy, F.R.C.S. Edin., M.B. Calcutta; *Major H. R. Brown, I.M.S., L.R.C.P. & S. Edin., L.F.P.S. Glasg.; *W. B. Johnson, Colonial Service, F.R.C.S., M.B., B.S.; *Captain J. C. Oxley, I.M.S., F.R.C.S. Edin.; *A. K. Contractor, M.B., B.S.; C. W. McKenny, Colonial Service, M.D., B.Ch., B.A.O. Dub.; C. Monge, M.D. Peru; Miss B. Hamilton, M.B. Dub.; R. V. Clayton, M.B., B.S. Durh.; W. G. Cobb, Colonial Service, M.B., Ch.B. Edin.; G. E. Aubrey, M.D., B.S. Lond.; Captain P. M. Rennie, I.M.S., M.B., Ch.B. Aberd.; D. F. O'Donoghue, Colonial Service, L.R.C.S. Irel.; W. R. Parkinson, Colonial Service, F.R.C.S. Eng., L.R.C.P.; J. E. Hailstone, Colonial Service, M.R.C.S., L.R.C.P.; J. Stewart, M.B. Irel.; J. P. B. Snell, Colonial Service, L.M.S.S.A.; G. C. Purvis, M.D., B.Sc. Edin.; P. C. Conran, Colonial Service, M.R.C.S., L.R.C.P.; S. Azmy, M.R.C.S., L.R.C.P., Diploma in M. & S. Egypt; Major D. C. Kemp, I.M.S., M.R.C.S., L.R.C.P.; A. Mouat, Colonial Service, M.B. Edin.; K. Manson, Colonial Service, M.B., B.S. Durh.; W. A. Murray, M.B., C.M. Aberd.; R. H. Nolan, Colonial Service, M.B., Ch.B. Edin.; V. G. L. van Someren, Colonial Service, L.R.C.P. & S. Edin.; P. W. Black, Colonial Service, L.R.C.S. Irel.; L. Doudney, Colonial Service, M.R.C.S., L.R.C.P.; T. R. Sandeman, Colonial Service, M.B., Ch.B. Edin.; F. C. V. Thompson, Colonial Service, L.M.S.S.A.; W. M. Nairn, M.B., Ch.B. St. And.; and C. G. Grey, Colonial Service, L.M.S.S.A.

* Passed with distinction.

QUEEN'S UNIVERSITY OF BELFAST.—

At examinations held recently the following candidates were successful:—

FIRST MEDICAL EXAMINATION.

Chemistry.—George V. Allen, William Bryars, Alfred G. Campbell, George Chesney, Charles D. Crawford, Alfred C. Dickey, Grace M. English, Francis Ewart, Eli Freeman, Hugh E. Hall, James A. Harbison, William J. Harvey, James H. B. Hogg, Robert N. B. McCord, Nathaniel McCullough, Joseph P. McGinley, Alexander G. McKee, Bernard W. McKinney, Michael McMenamin, Frederick McSorley, Patrick J. McSorley, Hugh E. Magee, David Mitchell, Elizabeth M. Moore, William Napier, Jeremiah O'Kane, Charlotte Pedlow, Margaret S. Purce, Charles A. W. Ramsay, Robert J. Rea, John Scott, Robert L. Sinclair, Mary G. Thompson, Norman C. L. B. Tweedie, Ernest S. G. K. Vance, John H. Vance, Thomas Wallace, Donald R. Wheeler, and Frederick H. Whyte.

Physics.—William Bryars, Alfred G. Campbell, George Chesney, Charles D. Crawford, Alfred C. Dickey, Grace M. English, Francis Ewart, Eli Freeman, Hugh E. Hall, Mary E. Henry, James H. B. Hogg, Robert N. B. McCord, Nathaniel McCullough, Joseph P. McGinley, Bernard W. McKinney, Michael McMenamin, Frederick McSorley, Patrick J. McSorley, Hugh E. Magee, Arthur J. Millar, David Mitchell, William Napier, Jeremiah O'Kane, Charlotte Pedlow, William H. Pedlow, Margaret S. Purce, Charles A. W. Ramsay, Robert J. Rea, William Saunderson, John Scott, Robert L. Sinclair, Mary G. Thompson, Ernest S. G. K. Vance, John H. Vance, James J. Walker, Thomas Wallace, Donald R. Wheeler, and Frederick H. Whyte.

Zoology.—Alfred C. Taggart and Norman C. L. B. Tweedie.

Botany.—David Corry, William J. Harvey, Mary E Henry, Alexander G. McKee, Herbert Moore, Joseph P. Smyth, Alfred C. Taggart, and Norman C. L. B. Tweedie.

SECOND MEDICAL EXAMINATION.

William K. Campbell, A. E. M. Carleton, Robert Condy, Frank J. Devlin, William W. Dickson, Michael Gilligan, George Gordon

William H. Hardy, David Jamison, Edward A. Mallon, Walter T. McCurry, James McKay, Thomas B. McKee, Frederick McKibbin, Terence P. McQuaid, J. C. Robb, John S. Savage, Albert F. L. Shields, Frederick G. Smyth, John K. Stewart, Robert F. Walker, John Warwick, John C. Wilson, Robert H. Wilson, and Robert C. McMillan.

Anatomy.—S. A. D. Montgomery and James M. Smith.
Physiology.—Henry D. Graves.

THIRD MEDICAL EXAMINATION.

Samuel Acheson, T. M. Adamson, William W. Allison, Samuel R. Armstrong, William W. Blair, James McK. Ferguson, William Gault, Herbert M. Jackson, William S. Lynd, Samuel McComb, V. C. Montgomery, W. M. O'Farrell, Samuel E. Picken, Joseph H. Porter, Robert S. Ross, Hugh A. Skillen, William J. Smyth, Martha J. M. Stewart, and William Speedy.

Medical Jurisprudence and Hygiene.—James E. Finlay, Edward W. Mann, and Alexander G. Mitchell.
Pathology.—Henry P. Hall.
Pathology, Medical Jurisprudence, and Hygiene.—Vincent Magee.

M.B., B.CH., B.A.O. EXAMINATION.

J. L. Brown, Frederick Carson, Peter A. Clearkin, T. D. Graham, William Megaw, Edgar Morison, S. I. Turkington, D. V. S. Willis, J. A. L. Wilson, and William Wilson.

D.P.H. EXAMINATION.

T. A. Adams, Harold Black, Edgar H. Condy, John McCloy, and Samuel K. McKee.

Dr. F. G. Bushnell, deputy medical officer of health of the urban district and Port of Newhaven, has been appointed acting medical officer of health and assistant school medical officer of the West Sussex (Northern) combined sanitary districts.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce for immediate publication "Hare Lip and Cleft Palate," by James Berry, F.R.C.S., and T. P. Legg, F.R.C.S., with 250 illustrations; "Pathology, General and Special, for Students of Medicine," third edition, by R. Tanner Hewlett, M.D., F.R.C.P., illustrated; and "Volumetric Analysis for Pharmaceutical Students," by C. H. Hampshire, illustrated.

LORD LISTER'S BEQUESTS.—In addition to family bequests, the late Lord Lister left £10,000 each to the Royal Society, King Edward's Hospital Fund, King's College Hospital, and the North London and University College Hospital. He stated that he did not wish his name to be "in any way associated with these sums in the future." He also left £20,000 to the Lister Institute of Preventive Medicine. He left his MSS. and sketches to the Royal College of Surgeons of England, and his orders and medals to the University of Edinburgh.

THE ASSOCIATION OF MEDICAL OFFICERS OF HEALTH: SECOND ANNUAL GENERAL MEETING.—The second annual general meeting of this association was held at the Holborn Restaurant on March 29th. In the unavoidable absence of the chairman, Dr. Rashell T. Davison, the chair was taken by Dr. F. G. Crookshank. Among those present were Mr. D. A. Belilios, Dr. A. Senior, Dr. Major Greenwood, Dr. H. A. Günther, and Dr. A. Butler Harris. The minutes of the last meeting having been passed as read, the honorary secretary drew attention to correspondence from Mr. C. A. Brigstocke and Mr. C. H. W. Parkinson. After some discussion the meeting adopted the following resolution:—

That the conjoint committee of the several associations of Part-time Medical Officers be requested to consider the advisability of organising as quickly as possible local centres throughout the country of medical practitioners holding part-time appointments under Government or local authorities to work in conjunction with the central committee.

The following resolution was also adopted:—

That the conjoint committee be requested to consider the best means of securing at general meetings of the constituent association the attendance of members of other associations.

The report of the council for the session 1911-12 was read and confirmed. A discussion arose as to the interpretation of the words "official duties," as given by the Public Health Committee of the British Medical Association. As the correspondence between the two associations is not yet terminated it was considered inadvisable at this meeting to go further than merely to record the opinion of those present, that "official duties" are the duties of a medical man's office under Government or a local authority. The treasurer's report was read, showing a satisfactory balance. The officers of the association were re-elected, and Mr. H. Bott was elected to fill the seat on the council vacated by Dr. E. G. Wales.

BRIGHTON WORKHOUSE ADMINISTRATION.—In connexion with the proposal of the Brighton Board of Guardians to appoint a consulting and operating surgeon for the workhouse at a salary of fifty guineas per annum, and for which appointment not a single application was received, the guardians decided to invoke the assistance of the Local Government Board on the matter. A committee of the guardians has been received at Whitehall, where, after the various points involved were discussed at length, Sir Arthur H. Downes, M.D., told the deputation that before offering any suggestions as to the guardians' future action, the whole matter of the medical administration at the workhouse would receive the consideration of the Local Government Board.

ST. BARTHOLOMEW'S HOSPITAL.—The special appeal, having for its object the raising of additional funds to meet a deficiency of income averaging £7500 per annum for the maintenance of the hospital, and the liquidation of a debt to the bankers amounting to £57,000, has received the generous support of the governors of the hospital. Up to the present time £6000 have been received in donations and upwards of £3000 have been promised in annual subscriptions. Mr. Edwin J. Layton, of Farringdon-street, E.C., a Member of the Court of the Stationers' Company and a governor of the hospital, has undertaken the duties of honorary secretary to the special appeal committee, and would be glad to receive contributions in aid of the object above mentioned.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The spring series of demonstrations of specimens contained in the Museum will commence on April 19th, when Professor A. Keith, the conservator, will lecture on specimens illustrating the Growth of Bones in Health and Disease; on April 26th on Osteogenesis Imperfecta and Static Deformities; and on May 3rd on Cervical Ribs and Anomalous Conditions of the Spine and Shoulder. Mr. S. G. Shattock, pathological curator, will commence his series on April 22nd on specimens illustrating Necrosis of Bone, and on April 29th and May 6th on specimens illustrating Diseases of the Genito-urinary System. The demonstrations, which are intended for advanced students and medical practitioners, will commence each day at 5 P.M.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Medical Benefits under the Insurance Act.

IN the House of Commons on May 1st Mr. J. A. GRANT has priority for a motion relating to the administration of the medical benefits under the Insurance Act. By the rules of the House this motion will be taken at a quarter past eight in the evening and the discussion may last until 11 o'clock.

Rural Housing.

Mr. BURNS, the President of the Local Government Board, in the course of the debate on the motion for the adjournment for the Easter recess, mentioned that since the Housing and Town Planning Act came into operation 1344 closing orders had been made in rural areas in regard to houses. All except 124 were, however, put into decent and habitable repair.

The Easter Holidays.

The House of Commons adjourned on Wednesday, April 3rd, for the Easter recess and reassembled on April 10th.

HOUSE OF COMMONS.

TUESDAY, APRIL 2ND.

Superintending Medical Officers in Ceylon.

Mr. MACCALLUM SCOTT asked the Secretary of State for the Colonies whether his attention had been called to the speech delivered by the Governor of Ceylon at the meeting of the Legislative Council on April 24th, 1911, in which he announced that the sanction of the Secretary of State had been obtained for the appointment of two superintending medical officers on the staff of the medical department, and further stated that it was proposed that these new staff appointments should be filled by European medical men; whether this reservation of certain posts for Europeans only was contrary to the settled policy of the Colonial Office in Ceylon; and whether this reservation had the approval of the Secretary of State.—Mr. L. HARCOURT replied: The proposal which was made by the Governor, and which my predecessor approved, was that these two new posts should usually be recruited from Europe unless there were local applicants possessing very exceptional merits, qualifications, and attainments. This is the policy to which I propose to adhere. The passage in the Governor's speech to which my honourable friend refers appears to relate especially to the first appointments to be made after

the creation of the new offices, which have now been filled by the transfer of experienced officers from another colony.

The Excess of Births Over Deaths.

Mr. LYNCH asked the President of the Local Government Board what was the excess of births over deaths in Great Britain for each of the 10 years ending with 1911, and including that year; and what was the rate per 1000 of such excess in relation to the population.—Mr. BURNS (in a written answer) replied: The excess of births over deaths in Great Britain in each of the 10 years 1902–11 and the rate of such excess per 1000 persons living are shown in the following table:—

Year.	Excess of births over deaths.	Rate per 1000 persons living.	Year.	Excess of births over deaths.	Rate per 1000 persons living.
1902	459,297	12·26	1907	445,365	11·32
1903	491,166	12·98	1908	473,451	11·88
1904	450,227	11·75	1909	450,506	11·22
1905	468,136	12·08	1910	465,470	11·48
1906	460,170	11·81	1911	403,462	9·86

Medical Treatment of Glasgow School Children.

Mr. BARNES asked the Secretary for Scotland whether his attention had been directed to the needs of the Glasgow school board for the medical treatment of school children as provided for by the Education (Scotland) Act of 1908; had an adequate sum been granted for the purpose; and would the department surcharge the members if the expenditure had been excessive.—Mr. MCKINNON WOOD replied: The answer to the first part of the question is in the negative. With regard to the amount of the grant for purposes of medical treatment the Scotch Education Department are in communication with the school boards and have invited suggestions as to the allocation of the sum of £7500 granted by the Treasury. I am not aware that any question of surcharge has arisen.

Visitation of Patients at Stobhill Hospital, Glasgow.

Mr. BARNES asked the Secretary for Scotland whether his attention had been called to a new set of regulations issued by the Glasgow parish council in regard to the visitations of patients at Stobhill Hospital by their friends; whether he was aware that only half an hour was now allowed; and would he take steps to get such regulations relaxed.—Mr. MCKINNON WOOD answered: After medical inquiry as to the former arrangements the rule referred to received the sanction of the Local Government Board for Scotland, that sanction being provisional and for six months only. If the rule is found to cause hardship it will be reconsidered.

Certifying Surgeons.

Mr. CHARLES DUNCAN asked the Secretary of State for the Home Department whether a certifying surgeon under the Compensation Act could also act as the private medical inspector to a firm whose sole business was in lead-smelting.—Mr. MCKENNA answered: I am not sure that I understand what the honourable member means by the certifying surgeon acting as "private medical inspector." If he means that he makes the periodical examinations of workpeople under the lead-smelting regulations, this is one of his duties as certifying surgeon. If, on the other hand, he means that the certifying surgeon acts as the medical adviser to the firm, the reply is that the certifying surgeon is not prohibited from acting in the capacity of adviser either to an employer or to an association of workpeople. It would not be possible to lay down such a rule, though this consideration is borne in mind in making appointments, because in industrial districts it is often difficult to find a well-qualified man who does not hold some appointment in connexion with employers or associations of workpeople. The department is always prepared to inquire into any case of grievance that may be brought to its notice.

WEDNESDAY, APRIL 3RD.

The Select Committee on Patent Medicines.

Mr. CHARLES BATHURST asked the Secretary of State for the Home Department whether he could now state the names of the Select Committee on Patent Medicines and the terms of the reference to it.—Mr. MCKENNA replied: I understand that the names of the members of the Select Committee and the terms of reference will be placed on the paper shortly after Easter.

Mr. LYNCH: Will the right honourable gentleman take a note that the main thing is to have a committee that will elucidate the whole question of patent medicines?—Mr. MCKENNA: Yes, sir.

Preservatives in Cream.

Mr. STAVELEY-HILL asked the President of the Local Government Board whether he had received any representations in respect of his proposed regulations laying down a standard for fat in preserved cream; whether he was aware that the regulation which compelled dairymen and grocers to write "Preserved Cream Boracised" on every invoice was likely to cause inconvenience and difficulty; and whether he could see his way to amend the clause in respect of its application to invoices.—Mr. BURNS wrote in reply: I shall carefully consider all representations received on the subject of these regulations.

Vaccination in the Central Provinces, India.

Mr. CHANCELLOR asked the Under Secretary of State for India whether he was aware that, in the Triennial Report on Vaccination in the Central Provinces for 1908–11, it was stated that the supply of a pure lymph of standard strength could not be secured under the present system, and that there was risk of septic lymph being used; and whether, in view of these circumstances and of the opposition of the Indian peoples to vaccination, he could see his way to abolish compulsory vaccination in those provinces.—Mr. MONTAGU furnished the following written reply: The statement in question expresses the Chief Commissioner's conclusion that really pure lymph can be obtained and risk of using septic lymph avoided by adopting in the Central Provinces the plan of a single central supply depôt which has proved satisfactory in other provinces. He has instructed the Sanitary Commissioner to examine the matter further. The Secretary of State is not prepared to take the action suggested in the last part of the question.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, 43, Maddox-street, London, W.

Smoke. A Study of Town Air. By Julius B. Cohen, Ph.D., B.Sc., F.R.S., Professor of Organic Chemistry in the University of Leeds, and Arthur G. Ruston, B.A., B.Sc., Science Tutor in the Department of Agriculture, University of Leeds. Price 5*s.* net.

BAILLIÈRE, J. B., ET FILS, Paris.

Hématologie et Cytologie Cliniques. Par le Docteur E. Lefas, Ancien Interne des Hôpitaux de Paris, Ancien Chef de Laboratoire à la Faculté de Médecine. Préface par P. E. Launois, Professeur agrégé à la Faculté de Médecine. Deuxième Édition entièrement refondue. Price Fr.4.

Traité Pratique de Pathologie Exotique, Clinique et Thérapeutique. Publié en Fascicules sous la Direction de MM. Ch. Grall et A. Clarac. III., Dengue, Fièvre Jaune. Choléra, Maladie du Sommeil. Par Reboul, Clarac, Simond, Métin, Martin, et Lebœuf. Price, paper, Fr.12; boards, Fr.13.50.

EVERETT AND CO., LIMITED, 42, Essex-street, Strand, London, W.C.

The Kingdom of Slender Swords. By Hallie Erminie Rives. Price 7*d.* net.

A Ladder of Swords. By Sir Gilbert Parker. Price 7*d.* net.

FORMIGGINI, A. F., Genoa.

Dr. William Mackenzie. Alle Fonti della Vita. Prolegomeni di Scienza e d'Arte per una Filosofia della Natura. Price not stated.

MASSON ET CIE, Paris.

La Constipation et les Troubles Intestinaux qui s'y rattachent. Par Arthur F. Hertz, M.A., M.D. Oxon., M.R.C.P., Assistant Physician, Physician in charge of the Electrical Department and Demonstrator of Morbid Anatomy at Guy's Hospital. Traduction Française par A. E. E. Reboul, L.R.C.P. and S. Edin., &c., Fellow of the Royal Society of Medicine, Médecin consultant à Châtel-Guyon. Avec une Préface du Dr. J. Ch. Roux. Price Fr.7.

REBMAN, LIMITED, London.

The Therapy of Syphilis, its Development and Present Position. By Dr. Paul Mulzer, of Berlin. With a Preface by Prof. P. Uhlenhuth, M.D., Privy Councillor. Translated by A. Newbold. Price 6*s.* net.

SPOTTISWOODE AND CO., LIMITED, New Street-square, London, E.C.

The Medical Register: Printed and Published under the Direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to an Act passed in the Year XXI. and XXII. Victoriæ, Cap. XC., entitled an Act to Regulate the Qualifications of Practitioners in Medicine and Surgery, 1912. Price 10*s.* 6*d.*

The Dentists Register: Printed and Published under the Direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to an Act passed in the Year XLI. and XLII. Victoriæ, Cap. XXXIII., entitled An Act to Amend the Law relating to Dental Practitioners. 1912. Price 3*s.* 4*d.*

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CLARKE, RICHARD CHRISTOPHER, M.B., Ch.B. Bristol, L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon at the Bristol Royal Infirmary.

GOOD, ARNOLD SAXTY, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Atherington District of Barnstaple (Devon).

GORDON, W., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Salisbury District of the county of Wilts.

HART, CHARLES HERBERT, L.R.C.P. Lond., M.R.C.S., has been appointed House Physician at the Bristol Royal Infirmary.

JEAFFRESON, D., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Blisworth District of the county of Northants.

NICHOLL, E. E., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the South Molton District of the county of Devon.

ROGERS, A. B., L.S.A. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Cliffe District of the county of Kent.

ROUTH, L. M., M.B., B.C., has been appointed Clinical Assistant to the West End Hospital for Diseases of the Nervous System.

SCOTT, N. C., M.B. Glasg., has been appointed House Surgeon to the Throat and Nose Department at the Bristol Royal Infirmary.

SPILL, ALFRED EDMUND VICTOR, L.D.S. Eng., has been appointed Dental House Surgeon at the Bristol Royal Infirmary.

STATHAM, REGINALD SAMUEL SHERRARD, M.B., Ch.B. Bristol, L.R.C.P. Lond., M.R.C.S., has been appointed Obstetric House Surgeon at the Bristol Royal Infirmary.

STEELE, S. T., M.R.C.S. Eng., L.R.C.P. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Morley District of the county of York.

TAYLOR, GORDON, M.S. Lond., F.R.C.S. Eng., has been appointed Surgeon with charge of Out-patients at the Great Northern Central Hospital.

THOMAS, C. S., M.B., Ch.B. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Workington District of the county of Cumberland.

TURNBULL, ROBERT CYRIL, M.D. Lond., has been appointed Medical Superintendent at the new Essex County Asylum, which is being erected at Colchester.

WATT, JAMES LESLIE, M.B., C.M. Aberd., has been appointed Medical Officer for the Workhouse, and Medical Officer and Public Vaccinator for the Tavistock and Tavistock Hamlets District of Devon.

WILLIAMS, W. H., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Monmouth (No. 2) District of the county of Monmouth.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AGRA, UNITED PROVINCES, INDIA, DUFFERIN HOSPITALS AND FEMALE MEDICAL SCHOOL.—Female Senior Doctor. Salary £26 13s. 4d. per mensem, with free quarters.

ALNWICK INFIRMARY.—House Surgeon, unmarried. Salary £140 per annum, with apartments, attendance, coals, and light.

AYR DISTRICT ASYLUM.—Junior Assistant Physician. Salary £140 per annum, with board, lodging, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street.—House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and washing.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—House Surgeon. Salary £75 per annum, with board and residence.

BRENTFORD UNION INFIRMARY, WORKHOUSE, AND SCHOOLS.—Second Assistant to Medical Superintendent, unmarried. Salary £125 per annum, with apartments, rations, washing, &c.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board, residence, and washing. Also House Physician, unmarried. Salary £100 per annum, with apartments, board, and laundry. Also Honorary Medical Clinical Assistant. Also Honorary Surgical Clinical Assistant.

BRISTOL GENERAL HOSPITAL.—House Physician for six months. Salary £80 per annum, with board, residence, &c.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Senior Resident Officer. Salary £90 per annum, with board, rooms, attendance, and laundry.

BURLEY-IN-WHARFEDALE, YORKSHIRE. SCALEBOR PARK ASYLUM.—Assistant Medical Officer. Salary £180 per annum, with board, &c.

BURNLEY, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £250 per annum.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, washing, and attendance.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CANCER HOSPITAL, Fulham-road, S.W.—Assistant Anæsthetist. Salary 25 guineas per annum.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.—Demonstratorship in Pathology. Salary £150 per annum.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

COBHAM, SURREY, SCHIFF HOME OF RECOVERY.—Resident Surgical Officer. Salary £100, with board, lodging, and washing.

COUNTY OF LONDON.—Coroner for South-Western District. Salary £1150 per annum.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

DREADNOUGHT HOSPITAL, Greenwich.—Assistant Physician for Diseases of the Skin.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary 100 guineas per annum, with board, residence, and attendance. Also Assistant House Surgeon. Salary £80 per annum, with residence, board, and washing.

FULHAM, PARISH OF.—Junior Assistant Medical Officer for six months. Salary at rate of £100 per annum, with board, apartments, and washing.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £175 per annum, with board, apartments, washing, and attendance.

HEREFORDSHIRE GENERAL HOSPITAL.—House Surgeon, unmarried. Salary at rate of £120 per annum, with board, apartments, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with residence, board, and laundry. Also Honorary Surgeon.

LEEDS TUBERCULOSIS ASSOCIATION SANATORIUM, Gateforth, near Selby.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LEICESTER INFIRMARY.—House Surgeon. Salary at rate of £120 per annum, with board, apartments, and washing. Also Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments and washing.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, residence, and washing.

LIVERPOOL UNIVERSITY.—Chair of Bacteriology and City Bacteriologist. Salary £800 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £120 per annum, with rooms, attendance, board, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board and residence.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary at rate of £100 per annum, with board, residence, and laundry.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Assistant Surgeon and Clinical Assistants.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing. Also Casualty Officer, unmarried, for six months. Salary £60 per annum, with board, lodging, and washing.

OLDHAM ROYAL INFIRMARY.—Second House Surgeon and Third House Surgeon, each for six months. Salary at rate of £100 and £80 per annum respectively, with residence, board, and laundry.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon for six months. Salary in each case at rate of £52 10s. per annum, with board and residence.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Senior House Physician, Junior House Surgeon, and Junior House Physician for six months. Salary of former £75 and of two latter £50 per annum, with residence, board, and laundry.

READING, ROYAL BERKSHIRE HOSPITAL.—House Physician and Second House Surgeon for six months. Salary in each case £80 per annum, with apartments, board, and washing.

ROCHESTER, ST. BARTHOLOMEW'S HOSPITAL.—Resident House Physician. Salary at rate of £110 per annum, with board, residence, and laundry. Also Resident House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiners.

ST. AUSTELL UNION AND RURAL DISTRICT COUNCIL.—Medical Officer. Salary at the rate of £390 per annum.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £85 per annum, with board and residence.

SHEFFIELD ROYAL INFIRMARY.—Assistant House Physician. Salary £70 per annum.

SHREWSBURY, SALOP INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and residence.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Physician. Salary £82 per annum, with board, residence, and laundry.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

TORQUAY, TORBAY HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Pathologist. Salary £150 per annum.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Physician. Also Assistant Physician.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Also House Surgeon. Salary in each case £80 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

YORK COUNTY HOSPITAL.—House Surgeon for six months. Salary at rate of £100 per annum, with board, residence, &c.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Acts at Baslow, in the county of Derby; at Penygroes, in the county of Carnarvon; at Yealmpton, in the county of Devon; and at Rockcorry, in the county of Monaghan.

Births, Marriages, and Deaths.

BIRTHS.

COWPER.—On April 3rd, at Peatling House, near Leicester, the wife of C. M. L. Cowper, M.R.C.S., L.R.C.P., of a daughter.

DREW.—On April 4th, at Redcote, Frinton-on-Sea, the wife of Douglas Drew, B.S., F.R.C.S., of Wimpole-street, W., of a son.

GENTLE.—On April 4th, at Colville-square, W., the wife of J. Alexander Gentle, M.B., C.M., of a son.

WILLAN.—On Easter Sunday, 1912, at 23, Claremont-place, Newcastle-on-Tyne, the wife of R. J. Willan, F.R.C.S. Eng., of a daughter.

MARRIAGES.

CLARK—ATKINSON.—On April 8th, at the Parish Church, Wanstead, by Canon J. R. Corbett, rector, Percy John Clark, M.R.C.S., L.S.A., of 2, Spital-square, Bishopsgate, E., to Eveline Sarah Atkinson, third daughter of the late William Atkinson, of Helmsley, Yorks.

YOUNG—KENNEDY.—On April 3rd, at All Souls', Langham-place, Robert Arthur Young, M.D., B.Sc., F.R.C.P., to Fanny Caroline Phœbe, second daughter of the late R. M. Kennedy, Indian Civil Service, and Mrs. Kennedy, 7, Albion-road, Sutton, Surrey.

A marriage has been arranged and will take place during the summer between Arthur Harold Shepard, B.A., M.D., of Chelford, Cheshire, fifth son of the late Henry Shepard, Esq., of "Oatlands," Wicklow, Ireland, and Muriel Sandford, only daughter of William Paterson Evans, "Brentwood," Bidston, Cheshire, Director of Evans Sons Lescher and Webb, Ltd., Liverpool and London.

DEATHS.

JENKINS.—On Good Friday, at Nevinston, Mannamead, Plymouth, Sir James Jenkins, K.C.B., M.D., Inspector-General of Hospitals and Fleets (retired), aged 93 years.

REED.—On April 1st, at Hove, after a short illness, George Reed, M.D., of Telscombe Cliffs, aged 78 years.

SWIFT.—On April 3rd, at 4, Gordon-square, W.C., Emmie, wife of Dr. W. J. Cropley Swift.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"606" IN BILHARZIOSIS.

To the Editor of THE LANCET.

SIR,—As some time may elapse before "Perplexed" can receive an answer from Cairo to his inquiry published in your issue of March 23rd, may I attempt a forecast of what that answer is likely to be? In bilharziosis it is to be noted that the symptoms of the disease do not depend directly upon the presence of the parasite, but are due to the presence of the eggs deposited by the worms in the tissues of the host. Further, it has been proved by Lortet that the extrusion of living eggs from the body of the host may continue for at any rate 14 years after the latter has been last exposed to infection, and in his case the number of eggs passed was calculated to exceed 15,000,000 since the last possible infection.

The benefit to be hoped for from the administration of salvarsan in bilharziosis would be the destruction of the parasite, but if this enormous number of eggs may still remain in the organs of the host the immediate result following the death of the parasite is likely to be *nil*. It is by no means certain that because salvarsan has spirochæticidal powers it will be found fatal to schistosoma in doses which can be tolerated by the patient. Salvarsan has no power to affect the eggs already deposited in the tissues, nor can it remove the changes which have taken place in these tissues owing to the presence of the eggs; but seeing that the effects of salvarsan itself on the alimentary canal and the urinary tract, the regions commonly involved in bilharziosis, may be to cause vomiting and diarrhœa in the former, and albuminuria, anuria, and even acute nephritis in the latter, there would seem to be some danger of the remedy itself increasing the symptoms due to the disease for which it had been prescribed. Apart from the fact that the administration of almost any drug will in a certain number of cases appear to cause an improvement in the symptoms of bilharziosis, I do not think it at all likely that the answer from Cairo when it comes will be favourable to "606."

I am, Sir, yours faithfully,

Ramsgate, April 4th, 1911. FRANK MILTON.

"THE MEDICAL WHO'S WHO."

A NUMBER of readers have written to us on the subject of a forthcoming new publication entitled "The Medical Who's Who." It appears that various medical men have received circulars from the publishers, inviting them to fill up and return forms of inquiry which deal more with personal than with professional matters; and our correspondents are naturally anxious, before complying with this request, to know what others are doing and what is generally thought in the profession about the need and desirability for such a publication. The publishers support their request for information with the statement that "A number of leading members of the profession have afforded them their coöperation"; upon this point we can make no comment because we have no knowledge. But we think their further assertion that "There is to-day no work of reference existing which deals adequately with the medical profession" is contrary to general opinion. We consider that the profession in this country is well served in the matter of registers, directories, and other works of reference, while these compare favourably with those produced in other countries. The original circulars, dated March 2nd, 1912, distinctly implied that the scope of the "Medical Who's Who" would be restricted to "leading medical practitioners" and "specialists and consultants." In our view such a limitation would have produced an undesirable book. But the publishers have since announced that they are communicating with all medical men on the Register, and we see from the circular issued this month that no restricting suggestion is now made. In these altered circumstances we cannot well advise our readers not to fill up such parts of the circular as they please.

TO ADVERTISERS FOR LOCUM-TENENTS.

To the Editor of THE LANCET.

SIR,—Should any of your readers who may advertise for a locum-tenent in THE LANCET receive an application from a "Dr." Covey, before accepting such application, may I be allowed to advise them to communicate with me?—I am, Sir, yours faithfully,

A. G. BATEMAN,
General Secretary, Medical Defence Union.

4, Trafalgar-square, London, W.C., April 2nd, 1912.

MODERN INVALID FURNITURE.

DESIGNS which aim at securing the ease and comfort of the human body in sickness are appreciated by patient and physician alike, and the ingenuity which has succeeded in devising adjustable chairs and couches, carriages, wheeling chairs and couches, and so forth, for the special needs of the invalid, is an obvious aid to treatment. That, at all events, is the impression an illustrated catalogue recently compiled by Messrs. John Ward, Limited, of 246 and 247, Tottenham Court-road, London, W., has given us. The catalogue is very complete and presents a large number of invalid appliances to choose from, all evidencing care in design and finish. Besides invalid furniture the list includes adjustable chairs and couches which secure rest and comfort for the fatigued body.

SUSCEPTIBILITY TO BELLADONNA.

To the Editor of THE LANCET.

SIR,—The following case seems worthy of record as exemplifying the idiosyncrasy of some individuals to such a poison as belladonna:—

A young primipara, being unable to nurse, applied an ordinary belladonna plaster to both breasts at the instigation of the woman who was nursing her. Up to this time she had been doing extremely well. When I visited her a few days subsequently I was told that she had been very ill the previous day, had been vomiting, and was talking nonsense and had been unable to see. On investigation I found both breasts (from which the plasters had been removed) covered with an intense erythema and well-marked papules, both pupils were well dilated, and the patient was unable to read small print, which she could usually do quite well. These symptoms all rapidly subsided in a few days. No doubt the congested state of the skin had conduced to the absorption of the poison. I am, Sir, yours faithfully,

Lyme Regis, Dorset. H. J. COOPER, M.B. Cantab.

FACTORY GIRLS' COUNTRY HOLIDAY FUND.

THE annual meeting of the supporters of this fund will be held on Wednesday, April 24th, at 3.30 P.M., at the Mansion House, Sir Thomas Crosby, M.D., Lord Mayor of London, in the chair. The report tells a story of progressive and valuable work and reveals a need for subscriptions and donations, which should be sent early in the year to the honorary treasurer (pro tem.), Miss Canney, St. Peter's Rectory, Saffron-hill, E.C.; or to the honorary secretary, Miss Paget, 28, Campden Hill-square, W.; or to the chairman, the Rev. Edward Canney, St. Peter's Rectory, Saffron-hill, E.C.

REDUCTION OF FREQUENCY OF HEART BEAT.

To the Editor of THE LANCET.

SIR,—In August last I made some observations in the course of treating patients which led me to read a paper before the Electro-therapeutical Section of the Royal Society of Medicine on "A Method of Reducing Excessive Frequency of the Heart-beat by means of Rhythmical Muscle-contractions Electrically Provoked." The paper was read on Feb. 16th last.

This morning there appears in the *Daily Mail* an article, which seems to be founded on my paper, under the somewhat sensational heading "Heart Machine" with a statement that the apparatus has just been installed at the Middlesex Hospital, and an account stated to have been given by a member of the staff of the electrical department there. As this account makes no mention of me, the suggestion seems to be that the discovery has been made and worked out at the Middlesex Hospital. I am, Sir, yours faithfully,

West Chapel-street, Mayfair, W., April 10th, 1912. W. HAMPSON.

R. W. G. S. (*Chatham*).—The most important references to Caisson Disease in THE LANCET from 1906 are as follows:—(*a*) 1906, vol. ii., p. 435, "Frictional Electricity: a Factor in Caisson Disease," by G. W. F. Macnaughton. (*b*) 1907, vol. ii., p. 691, "The Solubility of Air in Fats and its Relation to Caisson Disease," by H. M. Vernon. (*c*) 1907, vol. ii., p. 1675, "A Case of Caisson Disease," by F. H. Rudge. (*d*) 1909, vol. i., p. 297, "Physiology and Pathology of Work in Compressed Air," by Sir Thomas Oliver. (*e*) 1911, vol. i., p. 824, "Caisson Sickness and Compressed Air" (annotation).

Specialist.—What our correspondent proposes is in order, but he must expect his colleagues to regard his action with mixed feelings. The intention to specialise does not always command confidence, and local practitioners, while feeling this, may also wonder what guarantee they have that patients sent by them for special attention will not remain for general conditions.

E. F. T.—We think that the person who sent for our correspondent is liable in law for the attendance on this occasion; but it would be rather difficult to enforce the claim.

E. M. D. is strongly advised to have nothing to do with the quack institution she names.

W. R. Forbes, B.Sc., is thanked for his note.

R. P.—No.

ERRATA.—Dr. J. Penn Milton wishes to correct a slight error in his recent letter on "Pneumosan." In the part dealing with dosage, the twenty-sixth line from the bottom at p. 897, the words "the dosage is from 4 to 10 minims" should be followed by "for the first 10 days." In the following line, after the words "then the same dose," should be added "should be employed again for 10 days and" ..... The dosage of pneumosan is a first series of 10 injections—i.e. 4 minims, 6, 8, 8, 8, 8, 8, 10, 10, 10 minims, then two clear days' rest, followed by again the same series of 10 injections; then three weeks' rest, followed by a third series of 10 injections.——In our list of books received published on April 6th we said that the Fourth Section of "Bibby's Book on Milk" was not priced. We learn from Messrs. Bibby and Son, Formby-street, Liverpool, that the price is 10*s.* net.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for April, May, and June:—

April (London).—First Congress of Pure Food and Health Society of Great Britain.
,, 7th–14th (Athens).—Triennial International Congress of Orientalists.
,, 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
,, 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
,, 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
,, 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
,, 12th–30th (London, Olympia).—Ideal Homes Exhibition.
,, 14th (Berlin).—Eighth Congress of the German Röntgen Society.
,, 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
,, 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
,, 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
May 7th–17th (Washington).—Ninth International Red Cross Conference.
,, 13th (London, Guildhall).—Conference on Diet in Schools.
,, 23rd (opens) (Philadelphia).—Twelfth International Congress on Navigation.
,, 23rd–25th (Hanover).—Nineteenth Meeting of the Union of German Laryngologists.
,, 25th–27th (Paris).—International Musical Festival.
,, 26th–28th (Paris).—National Conference of the "Gouttes de Lait."
Whitsuntide (Portrush).—British Esperanto Congress.
May 27th–June 1st (London).—Eighteenth International Congress of Americanists.
,, 29th–31st (Berlin).—Fifteenth Session of the German Society for Gynæcology.
,, (London).—International Horticultural Exhibition.
May to October (London, Earl's Court).—Shakespeare's England.
June 11th–14th (Caxton Hall, Westminster).—Second National Conference on the Prevention of Destitution.
,, 24th–27th (London).—The (Biennial) Health Conference and Exhibition.
,, (London).—Missionary Exhibition.
,, (Atlantic City, N.J.).—Annual Meeting of the American Medical Association.
,, (Birmingham).—Tuberculosis Exhibition.
,, (London, Science Museum, South Kensington).—Second Optical Convention.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

Papers:

Dr. Frederick Taylor: The Treatment of Opium Poisoning by the Faradic Current.

Dr. A. E. Boycott and Dr. J. H. Ryffel: The Action of Diuretics in Experimental Nephritis.

WEDNESDAY.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION (Hon. Secretaries—A. Manuel, F. A. De T. Mouillot): at 5.30 P.M.

Discussion

On the Radium Emanations of Mineral Waters (to be opened by Dr. T. Pagan Lowe (Bath)).

(After the meeting Members will dine together at Bellini's Restaurant, Mill-street, Conduit-street, W., at 7 P.M. Price of dinner 4*s.* 6*d.* All Fellows and Members are invited to attend and bring guests. In order that proper arrangements may be made Members are requested to reply to the Hon. Secretaries of the Section, 15, Cavendish-square, W.)

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—J. H. Sequeira, Wilfred Fox), at 11, Chandos-street, W.: at 5 P.M.

Demonstration of Cases:

Dr. J. H. Sequeira: Unusual Nævus.
And other Cases.

FRIDAY.

GENERAL MEETING OF FELLOWS at 4.45 P.M.

Election of Candidates for Fellowship.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—G. Harrison Orton, Cecil R. C. Lyster): at 8.30 P.M.

Papers:

Dr. Reginald Morton: The Treatment of Rodent Ulcer.

Dr. S. Russ (Beit Memorial Research Fellow): The Clinical Use of the Active Deposit of Radium.

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester-square, W.C.

TUESDAY.—4.30 P.M., Dr. W. K. Sibley: Ionisation in the Treatment of Diseases of the Skin. Cases will be shown by Dr. M. Dockrell, Dr. W. Griffith, Dr. K. Sibley, Dr. J. L. Phibbs, and Dr. T. Galbraith.

ROYAL METEOROLOGICAL SOCIETY, Institution of Civil Engineers, Great George-street, Westminster, S.W.

WEDNESDAY.—7.30 P.M., Mr. J. E. Clark and Mr. R. H. Hooker: Report on the Phenological Observations for 1911.—Mr. R. G. K. Lempfert and Mr. W. Braby: A Method of Summarising Anemograms.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Mr. J. D. Siddall: Note on the Life-history of a Marine Diatom from Bournemouth.—Mr. E. B. Stringer: On a Modified Form of the Lever Fine-adjustment and a Simple Turn-out Device for the Substage Condenser.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Dr. E. Cautley: Fever in the New-born.—Mr. A. Edmunds: Acute Intestinal Obstruction in Infants.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. H. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Demonstration on Fevers (Dr. F. Thomson, at the North-Eastern Fever Hospital, St. Ann's-road, N.); Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Demonstration on Fevers (Dr. F. Thomson, at the North-Eastern Fever Hospital, St. Ann's-road, N.); Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. H. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Lecture Theatre of the Lister Institute, Chelsea Bridge-road, S.W.

TUESDAY.—5 P.M., Dr. W. Nicoll: Modern Aspects of Helminthology—Methods of Diagnosis. Recent Prophylactic and Curative Measures. (Lecture VII.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. E. S. Bishop: After-treatment of Abdominal Sections. (Post-Graduate Clinic.)

SALFORD ROYAL HOSPITAL.

THURSDAY.—4.30 P.M., Mr. J. P. Buckley: Hydronephrosis. (Post-Graduate Course.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M., Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (20th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 10th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 4	30·43	W.	...	90	58	45	46	48	Overcast
,, 5	30·17	S.W.	...	81	60	47	49	51	Cloudy
,, 6	30·21	W.	...	110	68	47	51	53	Fine
,, 7	30·33	S.W.	...	97	62	50	52	54	Fine
,, 8	29·88	N.W.	...	81	56	49	50	51	Cloudy
,, 9	29·77	N.	...	97	51	39	40	42	Fine
,, 10	29·66	N.W.	0·01	97	51	42	40	44	Cloudy

The following journals, magazines, &c., have been received:—Æsculape, Jahrbuch für Kinderheilkunde und Physische Erziehung, Journal of Comparative Pathology and Therapeutics, Canadian Medical Association Journal, Therapeutic Gazette, Monthly Cyclopædia, Medical Review, Caledonian Medical Journal, Bulletin de l'Association Française pour l'Étude du Cancer, Quarterly Journal of Microscopical Science, Journal of the Manchester Oriental Society, Man, Annals of Tropical Medicine and Parasitology, Zeitschrift für Experimentelle Pathologie und Therapie, Public Health, Journal of Obstetrics and Gynæcology, Archives of Pædiatrics, Archives Générales de Médecine, Pharmaceutical Journal, Dominion Medical Monthly, Yale Medical Journal, Cornell University Medical Bulletin, Child, West London Medical Journal, Journal of Laryngology, Rhinology, and Otology, Archives de Médecine et de Pharmacie Militaires, American Journal of Medical Sciences, Quarterly Journal of Medicine, &c.

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